

The New York
Academy of Medicine



By Exchange



Digitized by the Internet Archive
in 2016

<https://archive.org/details/illinoismedicalj76unse>

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

The Illinois State Medical Society

PUBLISHED AT OAK PARK, ILL.

CHARLES J. WHALEN, M.D., Editor

BERNARD S. MALOY, Assistant Editor

HENRY G. OHLS, Managing Editor



INDEX TO VOLUME 76

JULY TO DECEMBER, 1939

NEW YORK ACADEMY
OF MEDICINE

APR 25 1940

LIBRARY

226466

INDEX TO VOLUME 76

JULY TO DECEMBER, 1939

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the titles of papers read, officers

elected, etc., can be located in proceedings under Societies, Editorials, News of the State, Marriages, Deaths.

The subjects of editorials also appear alphabetically and are marked (E).

A	
Abdominal disease. Herbert Payne	
Miller, Rock Island.....	154
Allen, Thomas D. Discussion.....	324
Angina pectoris and coronary diseases. Oscar A. Strauss, Chicago.	351
Appendicitis, acute, with perforative peritonitis. Karl A. Meyer, Peter A. Rosi, Alfred Luecki and Malcolm Todd, Chicago.....	221
Appendicitis deaths. Arnold S. Jackson, Madison, Wis.....	355
Arens, Robert A. Paper	339
Arief, Alex J. Paper.....	465

B	
Bacillary dysentery control. Louis H. Block, Chicago; Alexander Tarnowski, Dixon; Bernard L. Greene, Elgin	435
Ball, Elizabeth B. Paper.....	265
Barbour, Orville, Discussion.....	82
Barker, M. Herbert. Paper.....	416
Beck, Joseph C. Paper.....	237
Discussion	264, 321
Bauer, W. W. Paper.....	519
Berghof, Robert S. Paper.....	329
Bernheimer, L. B. Paper.....	319
Bleeding, Gross rectal. Mortimer Diamond, Chicago.....	290
Block, Louis H. Paper.....	435
Blockson, Berget H., Jr. Paper....	270
Bothman, Lewis B. Paper.....	331
Boyer, Paul K. Paper.....	288
Brady, Leo. Paper.....	337
Breast tumor, Anchoring the. Earl I. Greene and J. M. Greene, Chicago	178
Breed, J. Ernest. Paper.....	344
Brown, Meyer, Paper.....	132

Burns, Treatment of. Charles L. Patten, Springfield	141
---	-----

C	
Calcium therapy re cardiovascular system. Edward Podolsky, Brooklyn, N. Y.....	179
California addresses doctors. (E)....	9
Callahan, G. B. Discussion.....	464
Camp, Harold M. Discussion.....	331
Campione, N. Louis. Paper.....	420
Cancer of the Cervix. Marshall S. Underhill	566
Cancer is curable. (E).....	201
Carcinoma of the larynx. L. B. Bernheimer, Chicago	319
Carcinoma of rectosigmoid. Guy V. Pontius and E. Lee Strohl, Chicago	281
Cardiac review of 1938. Nathan Flaxman, Chicago	182
Carey, John F. Paper.....	325
Carey, James. Discussion.....	462
Care of the New Born. Ralph A. Loar	551
Cataract vs. Glaucoma. Lewis B. Bothman, Chicago	331
Cerebral hemorrhage in the newborn. Heyworth N. Sanford, Chicago....	162
Cevitamic acid, Role of. M. A. Spellberg, Chicago	90
Child health program re obstetrics and pediatrics. Elizabeth B. Ball, Springfield	265
Christopher, Frederick. Discussion..	481
Citizenship for Practice.....	484
Clark, J. Sheldon. Paper.....	130
Cline, Jerald. Discussion.....	140, 373
Cole, Warren H. Paper.....	512

Colloidal aluminum hydroxide re treatment of gastric ulcer. Frederick Steigmann, Chicago	443
--	-----

Colloidal mercury sulphide re Wasermann, S. J. Zakon and M. A. Jacobson, Chicago	172
--	-----

Cook, Carol E. Paper.....	229
---------------------------	-----

CORRESPONDENCE:

A. M. A. policy not reversed....	302
American Board of Obstetrics. Paul Titus	113
Approved laboratory. A. C. Baxter	209
Caldwell's log	307
Chicago Heart Association.....	313
Civil Service Classification. W. E. Lancaster	14
Columnist comment	207
County Societies re Wagner Bill..	301
Criticism of Wagner Hospital Bill	211
Have you read this?.....	306
Honolulu from medical standpoint. James H. Hutton.....	404
House of Delegates Proceedings..	22
Illinois physicians at A. M. A....	17
Illinois physicians attend post-graduate courses	409
International Assembly	316
International medical assembly....	215
Maternal Welfare Committee....	408
Mental Defectives	305
Mississippi Valley Medical Society.	113
Murphy Button. C. S. Kreuscher	15
Nierling, Carl D.....	207
Politics re research.....	302
Post-Graduate Assembly in Champagne	406
Post-Graduate courses	16
Power to one man.....	213
Professional pride?	301
Public meetings	311

- Public Welfare Contributions. H. P. Saunders 499
- Refresher courses. T. B. Williamson 112
- Scientific programs 310
- Scientific Service Committee..... 311
- Seek to socialize law..... 212
- Senate Committee re Wagner Bill 303
- Socialized medicine from lay viewpoint 212
- Women's Auxiliary activities.... 409
- Wagner Act. G. B. Fauley..... 502
- Medical Economics. E. S. Hamilton 11
- County secretaries re scientific service committee. Robert S. Berghof. Chicago 329
- Cranial nerve paralysis. Theodore T. Stone and Alex J. Arieff, Chicago. 465
- Cutler, Max 321
- Danielius, Gerhard. Discussion.... 263
- Davison, Marshall. Discussion..... 227
- Drenckhahn, C. H. Paper..... 559
- Drennen, George L. Paper..... 524
- Family Doctor. Evelyn Parker.... 503
- DEATHS:
- Adelsberger, Bransford Louis. Peoria 199
- Baker, Henry Herbert. Cairo..... 99
- Barradell, Mary Salina. Chicago.. 99
- Becker, Norton George. Kankakee 200
- Beeson, Edward B. Chicago..... 200
- Berry, William Albert. Chicago.. 488
- Brewer, Edwin Jason. Shabbona. 488
- Cameron, Anson Mayes. Chicago. 392
- Carr, Orcutt Nathan. Oak Park.. 392
- Carter, William Andrew. Trenton 200
- Cauble, Willis Benton. Murphysboro 99
- Chapman, William E. Leland.... 99
- Cloyd, Frazier N. Danville..... 200
- Conley, Minnie Agnes Hinch. Wilmette 488
- Cook, Robert Calvin. Springfield. 200
- Crouch, Warner Latta. Fairview.. 488
- Daly, Timothy A. Chicago..... 488
- Dally, Harry Homer. Chicago.... 360
- Danford, Roscoe Conkling. Pana. 99
- Davenport, George Luther. North Chicago 392
- Degenhardt, Edgar August. Chicago 488
- Doan, Thomas D. Palmyra..... 99
- Doyle, Martin R. East St. Louis 99
- Duffy, Hugh John. Chicago..... 300
- Ehle, Chauncey E. Quincy..... 300
- Eisendrath, Daniel Nathan. Chicago 99
- Elliott, Charles Addison. Trenton 200
- Fisher, Waldo. Alton..... 100
- Fitzgerald, James Merlin. Chicago.. 575
- Floyd, Thomas Walter. Peoria.... 392
- Frazier, Wilmer Phelps. Carthage. 200
- Frein, Harry Joseph. Belleville.. 200
- Gatewood. Chicago 100
- Godfrey, Julia B. Day. Chicago.. 100
- Gunn, Frederick Henry,, East St. Louis, Ill. 576
- Haas, Raoul R. Chicago..... 392
- Hagan, James Harry. Lake Forest 488
- Hainline, Thomas C. Seaton..... 300
- Harms, Arthur Henry, Knoxville, Ill. 576
- Harper, George McClain. Springfield 392
- Hart, J. Ottis. Benton..... 100
- Hart, Edson B. Bloomington..... 392
- Haumesser, George J. L. Shumway 392
- Heacock, Edward Morton. Chicago 100
- Henry, Rolando Hamilton. Princeton 100
- Hertel, Henry. East St. Louis.. 488
- House, Arthur N. Kankakee..... 300
- Jens, Otto Frederick. Chicago..... 100
- Jones, Nathan A. Trilla..... 392
- Kahn, Myron Ellis. Chicago..... 300
- Kauffman, Adam Emory, Chicago.. 576
- Kuczkowski, Joseph J. Chicago.. 100
- Kotler, Harry. Chicago..... 200
- Kramer, Carl Frederick C. Chicago 488
- Krost, Joseph. Chicago..... 392
- Ladova, Rosalie M. Chicago..... 200
- Lawton, George William. Maywood 100
- Yount, Joseph Sterling. Chicago.. 488
- Lindsay, Arthur Robert. Lawrenceville 100
- Litz, Samuel J., Chicago..... 576
- Manchester, Howard D., Peoria, Ill. 576
- Love, George T. Wenona..... 300
- McCullum, Janet Leah Long. Oak Park 488
- McKinney, Ira. Champaign..... 392
- McManus, James M. Menard.... 200
- Mandel, Harry. Chicago..... 100
- Meloy, William Waddell. Chicago 392
- Metcalf, Frederick H. Franklin.. 100
- Mettler, Lee Harrison. Hubbard Woods 100
- Meyer, William John. Springfield 200
- Millard, Homer Alanson. Minonk 392
- Miller, Joseph F. Palmer..... 300
- Miller, William E. Chicago..... 100
- Mizell, Adolph G. Shelbyville.... 200
- Montgomery, Clinton L., Blue Mound, Ill. 576
- Murphy, Laurence Joseph. Evanston 100
- Nelson, George Cassell, La Harpe, Ill. 576
- Nickerson, Levin H. A. Quincy.. 100
- Nicolay, John W. Grayville..... 200
- O'Brien, Charles L. Chicago..... 200
- Oliver, Adam Hale. Edwardsville 392
- Oliver, Marcus Solomon, Chicago.... 576
- Orr, Loran Ernest, Springfield, Ill.. 576
- Pautler, Nicholas Bonifacc. Waterloo 488
- Payne, Oscar Bernard. Chicago.. 488
- Paxton, Robert Lester, Lemont, Ill.. 576
- Pearce, Franklin Benjamin. Eldorado 200
- Portis, Bernard, Chicago..... 576
- Portuondo, Buenaventura H. Belleville 200
- Pratt, Harry Preston, Chicago..... 576
- Renwick, Joseph Clyde, Warren, Ill.. 576
- Prince, Linnaeus Hodgson. Hines 300
- Riley, John Augustine. Chicago.. 392
- Roberts, Jonathan Manning, Chicago 576
- Rochow, Carl J. F. Rock Island.. 300
- Roth, Arthur E. Chicago... 392
- Rubin, Harry Lawrence. Chicago 488
- Rue, Doran Therman. Mattoon... 200
- Russell, Samuel. Macomb..... 200
- Sadler, Lena Kellogg. Chicago.... 488
- Sargent, Evlan. Moline..... 392
- Sasville, Ernest Max, Collinsville, Ill. 576
- Scott, James McDonald. Chicago. 200
- Schleich, Fred Harrison, Chicago.... 576
- Smith, George W. Peoria..... 488
- Sommenschein, Robert, Chicago..... 576
- Staley, Clinton B., Enfield, Ill..... 576

VOLUME INDEX

v

Staley, Wilbert A. Warrensburg. 100
 Stoll, John J., Chicago..... 576
 Thomas, Charles Derastus. Peoria 488
 Thompson, Jerome. Morrisonville. 200
 Trapp, Albert Rubly. Lincoln.... 300
 Ulrich, Everett R. Marine..... 200
 Vrtiak, Emil George. Chicago.... 488
 Wallace, Lesley Edwin. Thebes.. 200
 Wawrzynski, Wacław J. Chicago. 200
 White, Justus Vanculen. Decatur. 392
 Wick, William J. Chicago..... 488
 Wilder, Loren. Chicago..... 488
 Williams, Arthur Edward. Rock Island 300
 Williams, Edwin Cutler. Chicago. 200
 Williams, William. Chicago..... 200
 Wilson, G. Howard. Dalton..... 488
 Wing, Edgar Dumont. Galesburg. 100
 Wray, Gifford Dean, Jr. Chicago. 300
 Yudelson, Albert Bernard, Chicago.. 576
 DeCosta, Edwin J. Discussion..... 386
 Diabetes and surgery. Walter W. Voight, Chicago 167
 Diamond, Mortimer. Paper..... 290
 Diagnosis in acute pneumonias. Courtney N. Hamlin, Rockford.... 413
 Diverticulum of the Esophagus. Perry B. Goodwin.....
 Doctor Knox joins staff. (E)..... 300
 Doctor Townsend says. (E)..... 393
 Do you want to fight? W. P. Saunders, (E)..... 403

E

EDITORIALS:

A. M. A. Platform..... 489
 Citizenship for Practice..... 484
 Endocrine disorders from public health aspect. James H. Hutton, Chicago 78
 Epilepsy re current conceptions. Meyer Brown, Chicago..... 132
 Episiotomy, Hemorrhage from. Charles Finkelstein, Chicago..... 482
 Excretion urography. Alfred E. Jones and Robert A. Arens, Chicago 339
 Health Under Hitler..... 492

Evans, Vernon L. Paper..... 458
 California addresses doctors..... 9
 Cancer is curable..... 201
 Doctor Knox joins staff..... 300
 Doctor Townsend says..... 393
 Do you want to fight? W. P. Saunders 403
 Horace Wells discoverer of anesthesia 398
 How our doctors are pushed around 5
 Hypertension factors 108
 Illinois physicians on A. M. A. program 203
 Lay papers comment on A. M. A. acquittal 106
 Let them observe..... 1
 Long papers not desirable..... 101
 Medical writing technic an art.... 203
 Medicine in Russia..... 491
 Merry Christmas! 489
 Papers for 1940..... 492
 Poliomyelitis season is now with us 106
 Psychosis with Pernicious Anemia. George A. Wiltrakis and Anthony V. Partipilo 562
 Rheumatic fever reportable?..... 393
 Rush Medical College, a Graduate School 400
 Saint Louis Meeting of A. M. A. 1
 State medicine, a political football 201
 United profession, urgent need for 202
 Victory for A. M. A..... 101
 Elghammer, H. William. Paper.... 527
 Etiology and Diagnosis of Gastric Hemorrhage. M. M. Montgomery. 542
 Experience with the Audometer. G. Koehler 555

F

Falls, Frederick H. Discussion.... 463
 Falls, Frederick H. Paper..... 507
 Falstein, Eugene I. Paper..... 271
 Farrier, R. C. Discussion..... 337
 Fibroids of the uterus. A. E. Kanter, A. H. Klawans, Chicago..... 451
 Finkelman, Isidor. Paper..... 287
 Finkelstein, Charles. Paper..... 482
 Fistula re Mastoidectomy. Harold V. Wadsworth and George H. Woodruff 547

Flaxman, Nathan. Paper..... 482
 Ford, H. L. Discussion.... 132, 264
 Fractures, operative treatment of. Paul B. Magnuson, Chicago..... 475
 Fractures, treatment of compound. Carlow S. Scuderi, Chicago..... 160
 French, T. M. Discussion..... 253
 Fringer, W. R. Discussion..... 324

G

Gailey, Watson W. Paper..... 322
 Gastrointestinal symptoms of the respiratory infections in Children. John F. Carey, Joliet..... 325
 Galloway, Thomas C. Discussion... 321
 Gitelson, Maxwell. Paper..... 468
 Discussion 280
 Gibson, Stanley. Paper..... 589
 Glatt, M. A. Paper..... 254
 Goldstein, H. H. Discussion..... 254
 H. A. Paper..... 242
 Gore, Maurice. Discussion..... 337
 Greene, Bernard L. Paper..... 435
 Earl I. Paper..... 178
 J. M. Paper..... 178
 Greenwood, Glen. Discussion..... 321
 Grulee, Clifford. Discussion...166, 270
 Guibor, George P. Discussion..... 325
 Guttman, M. Reese. Paper..... 349
 Gynecology problems. Leo Brady, Baltimore 357

H

Health Education re Practice of Medicine. W. W. Bauer..... 519
 Hamlin, Courtney N. Paper..... 413
 Hannett, Frances 468
 Hardt, Leo L. Paper..... 229
 Hartung, Adolph. Paper..... 125
 Head, Jerome R. Paper..... 283
 Hilt, Laurence M. Paper..... 87
 Hirschberg, Nell. Discussion..... 442
 Horace Wells discoverer of anesthesia. (E) 398
 Horwitz, Sandor. Discussion..... 337
 How our doctors are pushed around. (E) 5
 Hoyne, Archibald L. Paper..... 136

Hutton, James H. Paper..... 78

Hypertension Factors. (E)..... 108

I

Illinois physicians on A.M.A. program. (E) 203

Illinois pneumonia control Howard A. Lindberg, Chicago..... 87

Intractable Peptic Ulcer. C. H. Drenckbahn 559

Irish, Henry E. Discussion..... 373

Isenberg, Morris. Paper..... 568

Kochler, G. Paper..... 555

J

Jackson, Arnold S. Paper..... 355

Jackson, James. Discussion..... 479

Jacobson, M. A. Paper..... 172

Jones, Alfred E. Paper..... 339

Jordan, George T. Discussion..... 262

K

Kanter, A. E. Paper..... 451

Kirschbaum, J. D. Paper..... 380

Klawans, A. H. Paper..... 451

Koebler, G. Paper 555

L

Landau, G. N. Discussion..... 343

Lang, Samuel J. Paper..... 288

Late obstetric hemorrhages: mortality in 1938. Charles Newberger, Chicago 368

Lay papers comment on A.M.A. acquittal. (E) 106

Leader, S. A. Paper..... 149

Loar, Ralph A. Paper..... 551

Let them observe. (E)..... 1

Levitt, Robert O. Paper..... 420

Levy, A. J. Discussion..... 159

Lewis, C. F. Paper..... 175

Lindberg, Howard A. Paper..... 87

Lindquist, John. Discussion..... 253

Long papers not desirable. (E).... 101

Lueck, Alfred. Paper..... 221

M

MARRIAGES:

Czeisler, Tibor. Freeport..... 197

Deaborn, Robert F. Orangeville.. 484

Eveloff, Abe R. Springfield.... 297

Gilman, William N. Wenona.... 484

Kaminski, Paul Joseph. Chicago.. 197

Krupka, John Miles. Berwyn.... 389

Law, Otis H. Pontiac..... 484

Marcovitch, Joseph. Dwight.... 484

Maydet, Simon J. Chicago..... 197

Musick, Rowland H. Mendota... 197

Neuchiller, Bernard B. Woodstock 484

Raiford, Theodore Sidney. Decatur 297

Redmond, Ralph N. Sterling.... 484

Ross, Edward Young. Chicago... 197

Sanders, Orland Miller. Centralia 484

Stubenrauch, Charles H., Jr., Havana 197

Toman, Andrew J. Chicago..... 389

Walton, Joseph E. Homer..... 389

Wood, Charles McCaw. Maroa... 484

Young, Warren W. Chicago..... 96

Maxillary sinusitis re dental surgery. J. Sheldon Clark, Freeport..... 130

Magnuson, Paul B. Paper..... 475

Markowitz, B. Paper..... 170

Martin, Clement L. Paper..... 229

Mauzey, Armand Jean. Paper..... 549

McArtbur, Jean. Discussion..... 331

McEnergy, E. T. Paper..... 559

Measles in 1938. Archibald L. Hoyne, Chicago 136

Medical writing technic an art. (E) 203

Medical Economics. E. S. Hamilton. 11, 111, 207, 309, 403, 496

Meyer, Karl A. Paper..... 221

Miller, Herbert Payne Paper..... 154

Morwitz, S. M. Paper..... 258

Montgomery, M. M. Paper..... 542

Munns, G. F. Discussion..... 269

Murray, W. G. Discussion..... 135

N

Nash, Edwin. Paper..... 373, 383

Nephropexy, G. F. Lewis and Paul L. Singer, Chicago 175

Newberger, Charles. Paper..... 368

Discussion 269

O

Obstetric analgesia, anesthesia and amnesia. Edwin Nash, Galesburg. 383

Obstetrical Rectal Examination. Armand Jean Mauzey..... 549

Payment for medical services.... 9

Obstruction of Common Duct by Stones. Warren H. Cole..... 512

Orr, H. Winnett. Paper..... 71

Otitis media and mastoiditis. M. A. Glatt, Chicago 254

P

Papers for 1940. (E)..... 492

Parkins, Leroy E. Paper..... 119

Pathology of Rheumatic Fever. Stanley Gibson 539

Partipilo, Anthony V. Paper..... 562

Patten, Charles L. Paper..... 141

Payment for medical services. (E).. 9

Pellagra in Chicago area. Vernon L. Evans, Aurora 458

Perlman, Lawrence. Paper..... 380

Personality factors in diagnosis and treatment. Leroy E. Perkins, Boston 119

Petrositis, clinical aspects. S. M. Morwitz, Chicago 258

Pitfalls of Roentgenological diagnosis. Laurence M. Hilt, Grand Rapids, Mich. 83

Pitressin re dementia praecox. Isidor Finkelman and Abraham Simon, Elgin, Chicago..... 287

Pneumonia in childhood. Walter M. Whitaker, Quincy 426

Pneumonia, general management. M. Herbert Barker, Chicago..... 416

Podolsky, Edward. Paper..... 179

Poliomyelitis re anti-streptococcal serum. Edward C. Rosenow, Rochester, Minn..... 144

VOLUME INDEX

vii

- Polionmyelitis season is now with us.
(E) 106
- Poncher, H. G. Discussion..... 95
- Pontius, Guy V. Paper..... 281
- Portwine birth mark re Grenz rays.
Cleveland White, Chicago..... 449
- Pregnancy in double uterus. Maurice
P. Rogers and Berget H., Block-
som, Jr., Rockford..... 270
- Progesterin in Obstetrical Complica-
tions. Frederick H. Falls..... 507
- Psychiatric problems. Frances Han-
nett and Maxwell Gitelson, Chi-
cago 468
- Psychosis in children. Eugene I.
Falstein, Chicago 271
- Psychoses, traumatic. H. A. Gold-
stein, Chicago 242
- Psychotic reaction following trauma.
D. Lewis Steinberg, Elgin..... 246
- Psychosis following head injuries.
Lewis B. Shapiro, Elgin..... 250
- R**
- Rabies control in Illinois. Cecil A.
Z. Sharp, Springfield..... 335
- Radium treatment re anterior vaginal
wall. Frank E. Simpson, J. Ernest
Breed, and James S. Thompson,
Chicago 344
- Rentfro, Charles C. Discussion.... 373
- Review of Metrazol Treatments.
Morris Isenberg 568
- Rheumatic fever reportable (E)... 393
- Rheumatic Fever in Children, Etiol-
ogy. George L. Drennen..... 524
- Roentgen re lesions of larynx. T. J.
Wachowski, Chicago 128
- Roentgen rays re pneumonia. Edmund
L. Rypins, Bloomington..... 424
- Roentgen re lesions of larynx.
Adolph Hartung, Chicago..... 125
- Rogers, Maurice P. Paper..... 270
- Rosenow, Edward C. Paper..... 144
- Rosi, Peter A. Paper..... 221
- Rush Medical College, a graduate
school. (E) 400
- Rypins, Edmund L. Paper..... 424
- S**
- Saint Louis Meeting of A. M. A.
(E) 1
- Sanford, Heyworth N. Paper..... 162
- Schnitz, Herbert. Discussion..... 463
- Scuderi, Carlow S. Paper..... 160
- Septal defects and mitrostenosis. J.
D. Kirshbaum and Lawrence Perl-
man, Chicago 380
- Serum and drug therapy in pneu-
monia. Italo F. Volini, Robert O.
Levitz, and N. Louis Campione,
Chicago 420
- Shapiro, Lewis N. Paper..... 250
- Sharp, Cecil A. Z. Paper..... 335
Discussion 158
- Shaughnessy, H. J. Discussion..89, 337
- Shronts, John F. Paper..... 373
- Signs and Symptoms of Rheumatic
Fever. King Woodward..... 526
- Simon, Abraham. Paper..... 287
- Simpson, Frank E. Paper..... 344
- Singer, Paul L. Paper..... 175
- Slobe, Fred W. Discussion..... 161
- Smoking, effects of. Jerome R. Head,
Chicago 283
- Solomon, Meyer. Paper..... 536
- Soloway, Herman M. Paper..... 346
- Spellberg, M. A. Paper..... 90
- State medicine, a political football.
(E) 201
- Steigmann, Gregory 442
- Steele, P. A. Paper..... 156
- Steinberg, D. Lewis. Paper..... 246
- Stoll, J. E. Discussion..... 386
- Stuttering as an Emotional and Per-
sonality Disorder. Meyer Solomon 536
- Stone, Theodore T. Paper..... 456
- Strauss, Oscar A. Paper..... 351
- Strohl, E. Lee. Paper..... 281
- Sudden death, anatomic findings. B.
Markowitz, Bloomington 170
- Surgery of face and neck. M. Reese
Guttman, Chicago 349
- Surgery, plastic of face and head.
Joseph C. Beck, Chicago..... 237
- Sweeney, Henry C. Discussion..... 236
- Syphilis and gonorrhea control in Illi-
nois. Herman M. Soloway, Spring-
field 346
- Thompson, James S. Paper..... 344
- Todd, Malcolm. Paper..... 221
- Treatment of Rheumatic Fever in
Children. H. William Elghammer 527
- Tuberculosis enterocolitis diagnosis.
Leo L. Hardt, Morris Weissman,
Carol E. Cook, Clement L. Martin,
Chicago 229
- Tuberculosis in the psychotic. S. A.
Leader, North Chicago..... 149
- Tularemia. P. A. Steele, Decatur.. 156
- Tuberculosis in Children re Servants 562
E. T. McEnery..... 559
- Typhus fever, endemic. Samuel J.
Lang and Paul K. Boyer, Evanston 288
- U**
- Ulcer of cornea, treatment. Watson
W. Gailey, Bloomington..... 322
- Umbilical cord knotting. A. T. Lund-
gren and William A. Boyce, Chi-
cago 441
- Underhill, Marshall S. Paper..... 566
- Undulant fever, infection and prophylaxis.
John F. Shronts, Woodstock 373
- United profession, urgent need for.
(E) 202
- V**
- Victory for A. M. A. (E)..... 101
- Voight, Walter W. Paper..... 167
- Volini, Italo F. Paper..... 420
- W**
- Wachowski, T. J. Paper..... 127
- Wadsworth, Harold V. Paper..... 547
- Weissman, Morris. Paper..... 229
- Whitaker, Walter M. Paper..... 426
- White, Cleveland. Paper..... 449
- Wiltrakis, George A. Paper..... 562
- Woodruff, George H. Paper..... 547
- Woodruff, Harry. Discussion..... 334
- Woodward, King. Paper..... 526
- Wound infection and compound frac-
tures. H. Winnett Orr, Lincoln,
Neb. 71
- Z**
- Zakon, S. J. Paper..... 172

T

Z

THE JOURNAL
OF MEDICINE
JULY 1939
LIBRARY

Illinois Medical Journal

OWNED AND PUBLISHED BY THE MEDICAL PROFESSION OF ILLINOIS
Office of Publication 715 Lake Street, Oak Park, Illinois; Editorial and Executive Office 6221 Kenmore Ave., Chicago

Vol. 76, No. 1

JULY, 1939

\$3.00 a Year

CONTENTS:

Editorials (For Titles See Extended Table of Contents) 1

ORIGINAL ARTICLES

Wound Infection and Compound Fractures.
H. Winnett Orr, M. D., Lincoln, Nebraska..... 71

Endocrine Disorders from Public Health Stand-
point. *James H. Hutton, M. D., Chicago.....* 78

Pitfalls of Roentgenological Diagnosis. *Laurence*
M. Hilt, M. D., Grand Rapids, Michigan..... 83

Illinois Pneumonia Control Program. *Howard A.*
Lindberg, M. D., Chicago..... 85

Role of the Cevitamic Acid in Clinical Conditions.
M. A. Spellberg, M. D., Chicago..... 90

EDITORIALS

Let Them Observe..... 1

St. Louis Meeting..... 1

How Our Doctors Have Been Pushed Around.... 5

Special Assessment by California Medical Associa-
tion 9

Organized Payments for Medical Services..... 9

(Continued on page 22)

Entered as Second-class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 8, 1879.
Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 8, 1917, authorized July 15, 1918.

MILWAUKEE SANITARIUM, Wauwatosa, Wis. For NERVOUS DISORDERS

(Chicago Office—1823 Marshall Field Annex
Wednesdays, 1-3 P. M.) Central 1162.

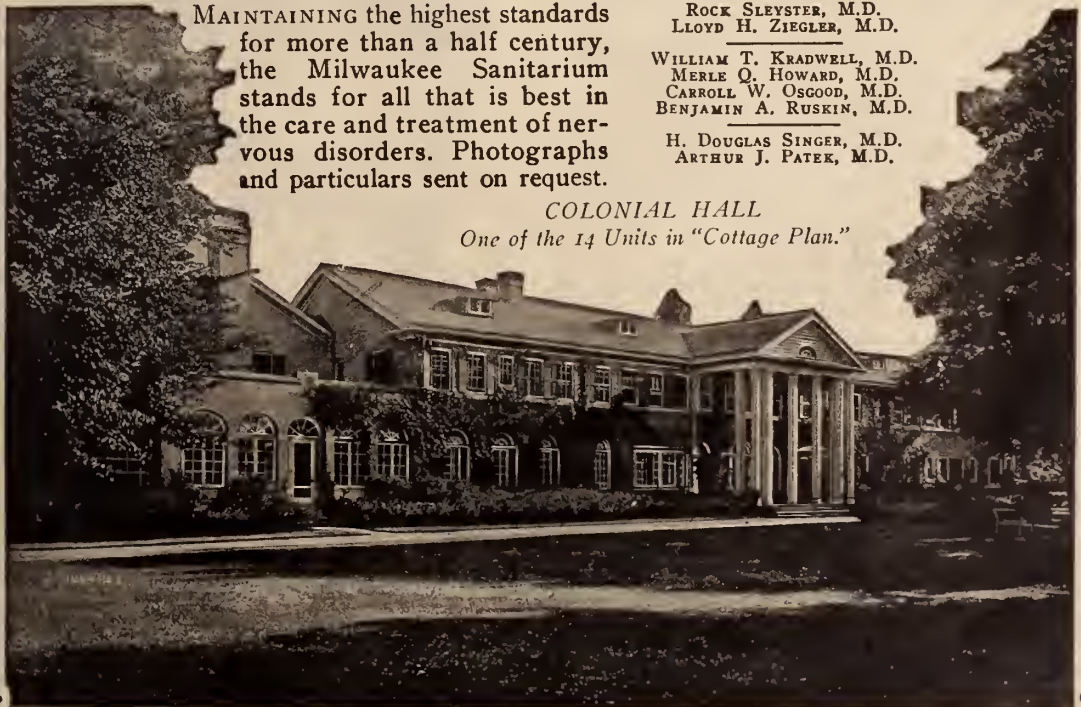
MAINTAINING the highest standards
for more than a half century,
the Milwaukee Sanitarium
stands for all that is best in
the care and treatment of ner-
vous disorders. Photographs
and particulars sent on request.

ROCK SLEYSER, M.D.
LLOYD H. ZIEGLER, M.D.

WILLIAM T. KRADWELL, M.D.
MERLE O. HOWARD, M.D.
CARROLL W. OSGOOD, M.D.
BENJAMIN A. RUSKIN, M.D.

H. DOUGLAS SINGER, M.D.
ARTHUR J. PATEK, M.D.

COLONIAL HALL
One of the 14 Units in "Cottage Plan."



EXCH. FULL

CAL-C-TOSE, 5-vitamin tonic

In the summer time, when appetites become capricious and stores of certain vitamins may go down to a low ebb, the choice of a suitable pan-vitamin preparation becomes especially important.



We suggest that you prescribe Cal-C-Tose "milk shakes" — 2 teaspoonfuls of Cal-C-Tose in a glassful

of milk 2 or 3 times a day. Not only is the drink delicious, but it also supplies a full protective complement of all the important vitamins, as well as calcium and phosphorus in combination, skimmed milk proteins, and cane and malt sugars, chocolate flavored.

THE NEW FORMULA—The vitamin content of each dose (2 heaping teaspoonfuls):

- 2000 U.S.P. Units vitamin A
- 150 International Units vitamin B₁
- 20 Sherman-Bourquin Units vitamin B₂
- 1000 International Units vitamin C
- 1000 U.S.P. Units vitamin D

HOFFMANN - LA ROCHE, Inc.
Roche Park, Nutley, N. J.

**MAKES
A DELICIOUS
SUMMER
DRINK**



CANNED FOODS AS PROTEIN SOURCES

● The primary function of protein in foods is that of a building material essential for tissue growth and maintenance. In 1897, Rubner postulated that all proteins are not of equal value in nutrition (1). Since that time, considerable attention has been directed towards the establishment of the types and amounts of protein required by man.

Chemical and biological investigations have demonstrated that different proteins may vary widely in both chemical composition (2) and ability to satisfy the nitrogen requirements (1, 3) of various animals. Of the twenty-odd amino acids which have been isolated from proteins (4) arginine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine have been shown to be essential in mammalian nutrition. The biological value of a protein is in reality a measure of its ability to supply those amino acids essential for tissue building and repair which the animal cannot synthesize (5) from material "ordinarily available" at a rate sufficient to meet body demands. A "complete" protein is one which will supply—or at least contains—the essential amino acids. Few proteins approach this ideal condition. Fortunately, however, a varied diet, containing proteins of both vegetable and animal origin, will usually supply all the essential amino acids which may not be supplied in adequate amounts by any one of the proteins.

As to the amounts of protein needed by men, experiments of the balance sheet or endogenous nitrogen elimination types (3, 6) have demonstrated that the protein require-

ments of the human adult may apparently be adequately met by relatively low protein intakes. These intakes are of the order of 0.5 gram per day per kilogram of body weight. However, there is evidence (3) that development of physique and general health is favored by more liberal protein intake. Since excess of protein above the requirement for tissue repair and growth is utilized as a source of fuel, the present trend is toward more liberal protein allowances.

In infancy and childhood, suggested protein allowances (3) are relatively high, being of the order of 3 to 4 grams of protein per kilogram of body weight in infancy and gradually decreasing with increasing age until adult allowances (3, 6) of 0.75 to 1.5 grams protein per kilogram of body weight are reached. Protein allowances of the order of 10 to 15 per cent of total calories as protein calories in the mixed diet throughout the entire life cycle, appear to be satisfactory. In the formulating of a mixed diet calculated to supply optimal amounts of proteins, the canned meats, marine, dairy and vegetable products may be freely used.

During recent years, popular interest has been concerned chiefly with the more recently discovered essential food factors such as the vitamins. However, the modern concept of adequate nutrition teaches that the optimum diet should be complete with respect to all known dietary essentials, protein, of course, included. In the attainment of this objective, the hundreds of commercially canned foods of animal and vegetable origin should prove both economical and valuable as protein sources.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

- (1) 1935. Nutrition Abstracts and Reviews, 4, 447
- (2) 1929. The Biochemistry of the Amino Acids, H. H. Mitchell and T. S. Hamilton, Chemical Catalog Company, New York.
- (3) 1937. Nutrition Abstracts and Reviews, 7, 257.

- (4) 1937. J. Am. Med. Assn. 109, 2070.
- (5) 1938. Annual Review Biochemistry, 7, 356.
- (6) 1938. Chemistry of Food and Nutrition, Fifth Edition, H. C. Sherman, Macmillan Co., New York.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the forty-ninth in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

WHY

THE EMULSION...

Petrolagar

FOR CONSTIPATION

No accumulation of oil in folds of mucosa.

1. Petrolagar is more palatable. Easier to take by patients with aversion to plain oil—may be thinned by dilution.
2. Miscible in aqueous solutions. Mixes with gastro-intestinal contents to form a homogeneous mass.
3. Does not coat intestinal mucosa. Petrolagar is an aqueous suspension of mineral oil — oil in water emulsion.
4. #4
5. Will not coat the feces with oily film.
6. Does not interfere with secretion or absorption.
7. Augments intestinal contents by supplying an unabsorbable fluid.
8. More even distribution and dissemination of oil with gastro-intestinal contents.
9. Assures a more normal fecal consistency.
10. Less likely to leak.
11. Provides comfortable bowel action.
12. Makes possible five types of Petrolagar to select from to meet the special needs of Bowel Management.

Petrolagar — Liquid petrolatum 65 cc. emulsified with 0.4 Gm. agar in a menstruum to make 100 cc.



Petrolagar

Petrolagar Laboratories, Inc. • 8134 McCormick Boulevard • Chicago, Illinois



Reduced Hazards in Antisyphilitic Treatment *with* Efficient Therapeutic Activity

Indicated in the treatment of syphilis, including the following types:

Early
Late

Latent
Congenital

In Pregnancy
Cardiovascular

Mapharsen (Meta-amino-para-hydroxy-phenylarsine oxide hydrochloride) is available at drug stores in single-dose ampoules of 0.04 or 0.06 gm., with or without sterile distilled water, and 10-dose (hospital size) ampoules of 0.4 or 0.6 gm.



PARKE, DAVIS & COMPANY • Detroit

The World's Largest Makers of Pharmaceutical and Biological Products

Smoothage

in constipation management

"SMOOTHAGE" describes the action of Metamucil in correcting constipation. It exerts a soothing, demulcent effect upon the bowel mucosa, allaying inflammatory conditions in colitis and other gastro-intestinal irritations.

Metamucil is a highly purified and concentrated vegetable mucilloid, prepared from the seed of *Plantago Ovata* (Forsk) and held in dispersion with a specially prepared milk powder.

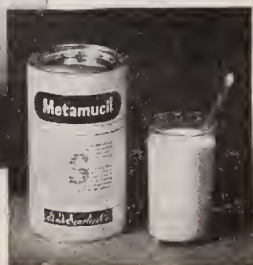
Taken with a sufficient quantity of water, Metamucil provides soft, smooth bulk, which increases the fecal residue and encourages elimination in the manner intended by Nature—reflex peristalsis initiated by bulk.

METAMUCIL

contains no roughage or other irritants.

Average dose: 1 to 3 rounded teaspoonfuls daily, taken in a glass of liquid and followed by an additional glass of water, milk or fruit juice.

Supplied in 1 lb., 8 oz., and 4 oz. containers.



G. D. Searle & Co.

ETHICAL PHARMACEUTICALS SINCE 1893

CHICAGO

NEW YORK

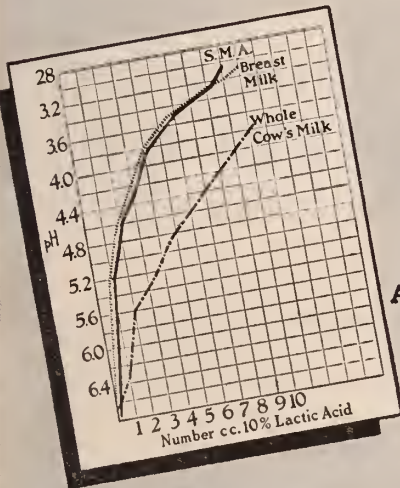
SAN FRANCISCO

KANSAS CITY

Why

S.M.A. FED INFANTS SHOW EXCELLENT NUTRITIONAL RESULTS

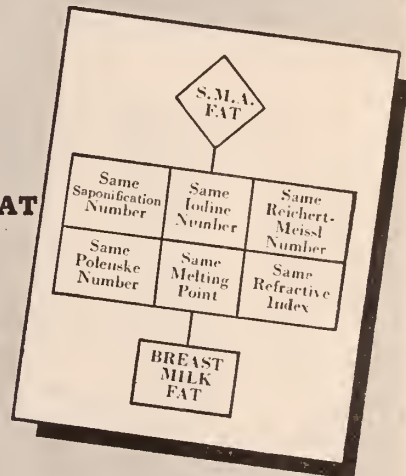
NOT ONLY IS THE ANALYSIS LIKE BREAST MILK



COMPARATIVE ANALYSIS OF S.M.A. AND BREAST MILK		
Chemical and Physical Analysis	S. M. A.	Breast Milk
FAT.....	3.5-3.6%	3.59
PROTEIN.....	1.3-1.4%	1.23-1.5
CARBOHYDRATE	7.3-7.5%	7.57
ASH.....	0.25-0.30%	0.215-0.226
pH.....	6.8-7.0	6.97
Δ.....	0.56-0.61	0.56
ELECTRICAL CONDUCTIVITY	0.0022-0.0024	0.0023
SPECIFIC GRAVITY.....	1.032	1.032
CALORIC VALUE: —PER 100 G. C.	68.0	68.0
—PER OUNCE...	20.0	20.0

AND THE BUFFER LIKE BREAST MILK . . .

BUT FAT OF S.M.A. IS LIKE BREAST MILK FAT



In Addition S.M.A. is an antirachitic and antispasmodic food—has a Vitamin A, B, and D content in each feeding that is constant every month of the year. It is usually unnecessary to feed any vitamin supplements other than orange juice.



S.M.A. is a food for infants—derived from tuberculin tested cows' milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride, altogether

forming an antirachitic food. When diluted according to directions, it is ESSENTIALLY SIMILAR TO HUMAN MILK in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and in physical properties.

SAMPLES FREE TO PHYSICIANS
(Please use Professional Stationery)



Light area represents a day's energy output by a test subject during the training period before gelatine feedings were started. Dark area represents a day's energy output by the same subject after gelatine feedings. In both cases the subject worked to the point of exhaustion.

Muscular Energy Doubled By PLAIN KNOX GELATINE (U. S. P.)

Recent physiological research has confirmed the importance of the phosphocreatine phase in muscle contraction in a group of male subjects, and has shown that energy output can be increased by more than 100% through "concentrated" feedings of plain Knox Gelatine (U.S.P.).

"Proceedings of the Society for Experimental Biology and Medicine", 40:157, 1939.

Knox Gelatine is high in certain amino acids, which are precursors of muscular creatine. Thus, by increasing the phosphocreatine content of the muscle, Knox Gelatine increases its chemical store of potential energy.

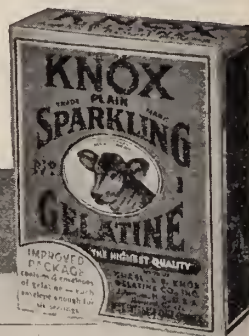
The gelatine used in this study was plain Knox Gelatine (U.S.P.) which assays 85% protein and which should not be confused either with inferior grades of gelatine or with sugar-laden dessert powders, for these latter products will not achieve the desired effects. When you desire pure U.S.P. Gelatine, be sure to specify KNOX. Your hospital can get it on order.

EXTRA ENERGY FORMULA

Empty one envelope of Knox Gelatine in a glass three-quarters filled with cold water or fruit juice (or half water and half fruit juice). Let the liquid absorb the gelatine. Then stir briskly and drink immediately before it thickens. Take four times a day for two weeks, then reduce to two envelopes a day. (May be taken before or after meals).

WRITE
Dept. 483

KNOX GELATINE LABORATORIES
JOHNSTOWN NEW YORK

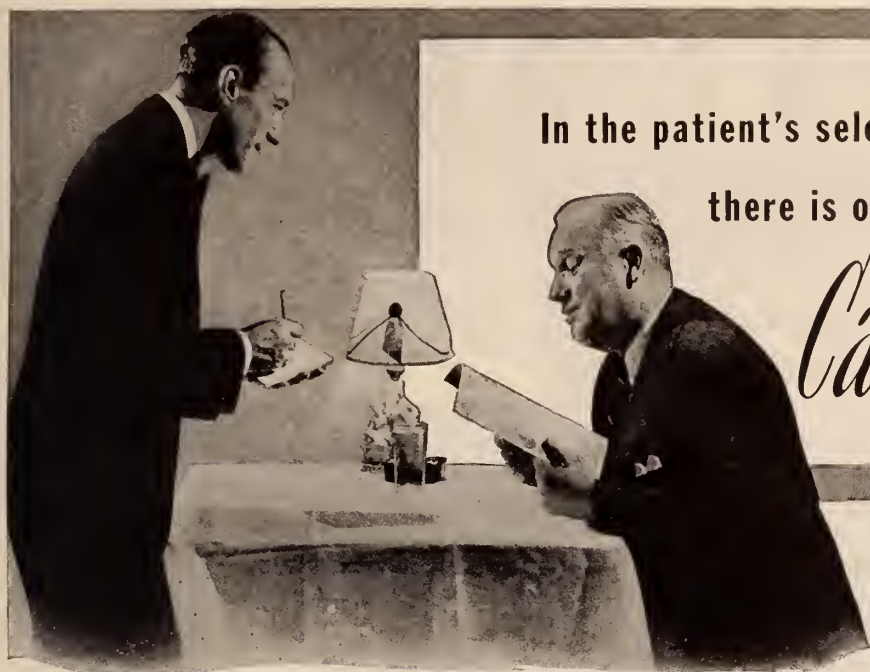


Please send literature on
the use of Knox Gelatine
to increase energy.

Name _____
Street _____
City _____ State _____

In the patient's selection of food
there is often a lack of

Calcium



SQUIBB offers a product which supplies both calcium and phosphorus in balanced ratio *plus* enough Vitamin D to aid in their utilization.

Reports in medical literature during recent years have called attention to the need for calcium—and the lack of it in many of the foods comprising the average American diet.

When the diet fails to meet the bodily requirement for calcium and phosphorus, the supplemental use of Dicalcium Phosphate Compound with Viosterol is indicated to promote the retention of these elements.

Useful in Many Conditions

Dicalcium Phosphate Compound with Viosterol finds its widest use during growth and development, and during the physiologic crises of pregnancy and lactation. The preparation has also been used, both pro-

phylactically and therapeutically, in certain dermatologic and allergic conditions, in hepatic disease and in lead poisoning.

Two Dosage Forms

Dicalcium Phosphate Compound with Viosterol Squibb supplies calcium, phosphorus, and Vitamin D in therapeutically effective quantities. One pleasantly flavored tablet (or two capsules) contains 9 grains dicalcium phosphate, 6 grains calcium gluconate, and 660 U. S. P. XI units of Vitamin D.

The capsules of Dicalcium Phosphate Compound with Viosterol Squibb are useful as an alternative dosage form. Capsules are available in bottles of 100 and 1000; tablets in boxes of 51 and 250.



You are cordially invited to visit the exhibit — "Safeguarding Medicinal Products by Research and Control" — sponsored by E. R. Squibb & Sons, in the Medicine and Public Health Building at the New York World's Fair

For literature address the Professional Service Department, E. R. Squibb & Sons, 745 Fifth Ave., New York.

**SQUIBB DICALCIUM PHOSPHATE
COMPOUND *with* VIOSTEROL** TABLETS
CAPSULES

JOINT REPAIR

in Arthritis



X-ray at left, dated 10/5/36, "shows complete destruction of shoulder joint with marked bone destruction of the glenoid fossa and head of humerus."



X-ray at right, dated 11/6/36, "shows considerable improvement, increased density of the bones; the upper end of the humerus and the glenoid cavity have more clearly defined borders; joint space is visible; loose spicules of bone have been absorbed" (roentgenologist's reports).

ERTRON, high dosage vitamin D in a special form, in a large percentage of the cases treated, produces the objective improvements which constitute the final aim of arthritic therapy. Pain usually disappears with remarkable rapidity, periarticular swelling and induration yield, and mobility gradually redevelops, together with improved muscular strength, heartier appetite, weight gains, and a more hopeful outlook on life.

In all cases reported in the literature,

and in the personal communications of many clinicians, the administration of Ertron does not produce alteration of the serum calcium and phosphorus levels; in the indicated dosage, it apparently exerts no untoward influence on circulation and visceral functions. Ertron is available only upon prescription or to physicians direct, in bottles of 100 capsules, each containing not less than 50,000 U.S.P. units of vitamin D. Professional correspondence is invited.

NUTRITION RESEARCH LABORATORIES, Inc.
332 SOUTH MICHIGAN AVENUE • CHICAGO, ILL.

ERTRON



Father to Son to Grandson

Colonic stasis, caused by intestinal atony, often occurs in the same family, and its attendant constipation may frequently be traced through several generations. Well-chosen salines are beneficial and can be intelligently administered over a period of time in relieving such constipation.

Sal Hepatica

by its osmotic influence, brings *liquid bulk* to the intestines. The resulting stimulation of peristalsis gently clears the intestines of residues. Its mineral salts help to combat the gastric hyperacidity which so often accompanies constipation. Choleric and cholagogic

actions induce increased flow of bile from both the liver and the gall bladder.

Sal Hepatica, resembling the action of famous natural mineral spring waters, makes a zestful, pleasing drink . . . Shall we send samples and literature?

Sal Hepatica

Flushes the Intestinal Tract and Aids Nature Toward Re-establishing a Normal Alkaline Reserve



BRISTOL-MYERS CO.
19-RR WEST 50th ST.
NEW YORK, N. Y.

The Plight of the HUNGRY BABY



IN CONSTRUCTING the artificial formula, the infant's nutritional requirements should come *first*. In some foods, however, major emphasis is placed upon digestibility alone. And in others—in an attempt to achieve an analysis similar to breast milk—the biological differences between cow's milk and breast milk are ignored.

There is no such compromise in Biolac—the new, liquid modified milk for infants.

Biolac is designed to meet *both* the digestional and nutritional requirements of the baby. In the sum of its nutritional value, ready digestibility, simplicity, and safety, Biolac resembles breast milk more closely than any artificial food or cow's milk modification heretofore available for infant

feeding. Yet, Biolac *is simple*—for all concerned.

*Only The Breast Is Simpler
Or Quicker Than Biolac*

Here's all there is to feeding Biolac at any age:

Dilute Biolac with an equal part of boiled water. Offer 2½ ounces per pound of body weight daily. (Slightly more dilute formulas are, of course, recommended during the newborn period or when changing from other foods.)

Biolac is marketed only through professional channels, sold only in drug stores. No feeding directions are given to the laity.

Send coupon for further information.

Biolac



MADE BY
THE BORDEN COMPANY

THE BORDEN COMPANY,
Prescription Products Division, Dept. I-79-L,
350 Madison Avenue, New York, N. Y.

Please send me without obligation a copy of "Biolac, a New Liquid Modified Milk for Infants."

Name

Address

City State

ONE CASE, observed
for yourself, is more convincing
than a hundred published case
histories. But what others have
done is important too. May we
send you *the published studies on
the irritant properties of cigarette smoke*
listed below?

PHILIP MORRIS & CO. LTD., INC., 119 FIFTH AVENUE, NEW YORK

Please send me copies of the reprints checked.

- ☐ Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245—"Pharmacology of Inflammation: III. Influence of Hygroscopic Agents on Irritation From Cigarette Smoke."
- ☐ N. Y. State Jour. Med. 1935, 35-No. 11,590—"Irritating Properties of Cigarette Smoke as Influenced by Hygroscopic Agents."
- ☐ Laryngoscope, 1935, XLV, No. 2, 149-154—"Some Clinical Observations on the Influence of Certain Hygroscopic Agents in Cigarettes."
- ☐ Laryngoscope, 1937, XLVII, 58-60—"Further Clinical Observations on the Influence of Hygroscopic Agents in Cigarettes."

NAME _____ ADDRESS _____

CITY _____ STATE _____

ILL.



The time element in the development of new medicinal products should be considered as carefully as clinical and other data. The passage of time affords perspective, permits considered judgment, and engenders confidence. *¶* Eli Lilly and Company believes that to "make haste slowly" is often the proper approach to therapeutic ideas which may require long periods of time for proper study and development.

● 'Sulfo-Merthiolate' (Sodium *p*-Ethyl Mercuri Thiophenylsulfonate, Lilly) 1:1,000 Surgical Powder has many general uses. It is protective and soothing as well as antiseptic to body surfaces which are bathed in perspiration during summer months. The antifungicidal action of 'Sulfo-Merthiolate' makes the powder especially valuable in the treatment of ringworm or hyperhidrosis of the feet.

'Sulfo-Merthiolate' 1:1,000 Surgical Powder is supplied in cans containing 1 1/2 ounces.

ELI LILLY AND COMPANY

INDIANAPOLIS, INDIANA, U. S. A.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 76

OAK PARK, ILL., JULY, 1939

No. 1

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

GENERAL OFFICERS, 1939-1940

PRESIDENT.....JAMES H. HUTTON, Chicago
PRESIDENT-ELECT.....J. S. TEMPLETON, Pinckneyville
1ST VICE-PRESIDENT.....J. S. LUNDHOLM, Rockford
2ND VICE-PRESIDENT.....F. H. MULLER, Chicago
SECRETARY.....HAROLD M. CAMP, Monmouth
TREASURER.....A. J. MARKLEY, Belvidere

THE COUNCIL

E. H. Weld.....1st District, Rockford 1941
E. C. Cook.....2nd District, Mendota 1941
J. S. Nagel.....3rd District, Chicago 1940
L. E. Day.....3rd District, Chicago 1942
Percy E. Hopkins...3rd District, Chicago 1941
E. P. Coleman.....4th District, Canton 1940
Ralph P. Peairs.....5th District, Normal 1940
T. B. Knox.....6th District, Quincy 1942
I. H. Neece.....7th District, Decatur 1940
C. E. Wilkinson...8th District, Danville 1940
Andy Hall.....9th District, Mt. Vernon... 1942
Henry G. Horstman.10th District, Murphysboro ... 1942
Edw. S. Hamilton..11th District, Kankakee 1941
S. E. Munson.....At Large, Chicago 1942
Rolland L. Green...At Large, Peoria 1940
Rollo K. Packard...At Large, Chicago 1941
Chairman of the Council.....L. E. Day, Chicago

EDITOR

CHARLES J. WHALEN.....25 E. Washington St., Chicago

GENERAL COUNSEL

EDWIN W. RAWLINS.....77 West Washington St., Chicago

LEGISLATIVE COMMITTEE

JOHN R. NEAL, *Chairman*.....Springfield

MEDICO-LEGAL COMMITTEE

J. R. BALLINGER, *Chairman*.....2724 W. North Ave., Chicago
R. O. HAWTHORNE, *Secretary*.....Kankakee

EDUCATION COMMITTEE

R. R. FERGUSON, *Chairman*...4013 N. Milwaukee Ave., Chicago
MISS JEAN MCARTHUR, *Secretary*.30 N. Michigan Ave., Chicago

PERMANENT HISTORIAN

IRVING S. CUTTER.....301 East Chicago Ave., Chicago

SCIENTIFIC SERVICE COMMITTEE

ROBERT S. BERGHOFF, *Chairman*..30 N. Michigan Ave., Chicago
HAROLD M. CAMP, *Secretary*.....Monmouth

PUBLICATION COMMITTEE

HARRY J. STEWART, *Secretary*.....715 Lake St., Oak Park

Outside of editorial or allied views or statements that are the authoritative actions of the Illinois State Medical Society, the organization denies responsibility for opinions and statements published in the ILLINOIS MEDICAL JOURNAL. Views expressed by the various authors and views set forth in various departments in the JOURNAL represent the views of the writers.

State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original article, advertising copy, cuts and all communications relating to advertising to ILLINOIS MEDICAL JOURNAL, 30 N. Michigan Avenue, Chicago.

Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is \$3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. \$4.00 per year for all foreign countries included in the postal union. Canada, \$3.50. Single current copies, 50 cents.

Editorials

LET THEM OBSERVE WHAT HAS HAPPENED TO SOCIALIZED MEDICINE IN THE HOLY LAND OF THEIR DREAMS

The advocates of that new panacea (socialized medicine) in some cases are undoubtedly earnest and honest men, but in plenty of other cases they are only fools who have smoked the Moscow marihuana. Let them observe what has happened to socialized medicine in the Holy Land of their dreams. The best beds in the hospitals there are not occupied by poor men; they are occupied by Stalinist jobholders. And the best doctors do not labor in the wards; they devote their science to treating the Bolshevik bigwigs, and (so we are asked to believe on oath) occasionally poisoning them.—*Nassau Medical News from The Jour. A. M. A.*

THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association held its ninetieth annual session in St. Louis, May 15-19. This is the sixth time that the annual session of the American Medical Association was held in St. Louis. Previous sessions were held in 1854, 1873, 1886, 1910 and 1922 and the Presidents in those years were, respectively, Charles A. Pope, Thomas M. Logan, William Brodie, William H. Welch and George E. de Schweinitz.

St. Louis is to be congratulated on having been host to such a successful convention of this, the largest medical organization in the world. There was a registration of 7,412 out of a membership as of May 1, 1939, of 113,113. Registration in recent meetings have been: 1938, San Francisco, 6,000; 1937, Atlantic City, 9,764; 1936, Kansas City, 6,824; 1935, Atlantic City, 8,166.

The Illinois State Medical Society was represented by its full quota, nine delegates. The delegation fared better than in previous years in

the assignment of members to respective reference committees.

Over 1,300 Illinois physicians registered at the meeting. Illinois doctors were everywhere in evidence among the nearly 8,000 medical men and their families from all over the United States who gathered for the convention.

Forty-one physicians from nineteen foreign nations were present at the session.

Members of the House of Delegates and officers of the association were entertained at a dinner given by the St. Louis County Medical Society on Monday evening. Entertainment included a puppet show in which officials of the association were sentenced in an anti-trust "mistrrial" to twenty years in the doghouse and were released only when Aesculapius came to their assistance. Among other characters in addition to Doctor Going West and Doctor Shark-bein were Dr. Grim Daisy Healer of non-medical cures; Blackstone Bunk, a lawyer; P. Fuller Bloat, an economic royalist; Michael Skullbuster, labor racketeer; Dr. Joe DeJerker, promoter of cults, and Vivian Anti-Vici. Other skits of the puppet show satirized three large clinics.

Dr. Irvin Abell, in his presidential address, reviewed the stand taken by the American Medical Association at the special meeting of the House of Delegates in Chicago last September, toward the recommendation of the technical committee on medical care for the participation of the Federal Government in health activities. This attitude is summarized in the following quotation from his address:

"Expansion of public health, maternal and child welfare services with limitation of curative measures to private practice where available; utilization of vacant beds in present hospitals on a per diem basis; the construction of new beds and diagnostic health centers on a basis of economic, geographic and health needs with standards for hospital administration for professional personnel; perpetuation of hospital and health centers; the formulation of plans for the care of the medically needy, determined by local and financial needs under medical and local state supervision; the approval of sickness compensation and of voluntary insurance for hospital and medical service, and unqualified opposition to the suggestion that the individual states initiate studies and plans for all their people on a tax paid basis."

Dr. Abell said the principal point in the indictment of the American Medical Association was determination of where the power of policing professional organizations lay, stating that heretofore it had been left to the organizations to establish standards of qualifications, training, attainment, character and conduct of members of their ranks. He advocated fighting the issue to the Supreme Court if necessary. The doctor reiterated the five proposals of the National Health Program which the association favors as follows: (a) the health of impoverished persons should be protected by the government; (b) a department of health should be established with a physician as a cabinet member; (c) public health, maternal and child welfare services should be expanded; (d) better use should be made of existing hospital facilities and more hospitals should be built where necessary; (e) although compulsory health insurance is undesirable, hospital insurance and cash indemnity insurance for the payment of doctor bills are all right.

Dr. Rock Sleyster, Wauwautosa, Wisconsin, in his president-elect address, pointed out a gain of 14,000 members in the last five years. This statement was in answer to the claims of disintegration of the association. He likewise deplored the increasing number of medical organizations, claiming they dissipate the strength of the profession. He suggested that members not express personal opinions as the opinion of the profession as a whole.

The most important business of the house of delegates was that dealing with the Wagner Bill and the National Health Program, now pending in Congress. A special committee of five was appointed to study all matters introduced pertaining to the Wagner act. The reference committee devoted some ten hours, in three meetings, considering recommendations concerning the Bill. The room in which the committee convened was taxed to standing room capacity. The hearings on the measure was attended by representatives of the various state medical societies, by hospital groups and agencies other than committee appointees who sought to listen or add their voice to the hearing.

The findings of the reference committee were published in the June issue of the ILLINOIS MEDICAL JOURNAL. Every member of the Illinois State Medical Society should read and di-

gest every word of the report of the reference committee. It is likewise important that every member do his or her part to see that the findings of the house of delegates are carried out. Each member can assist to bring the findings of the committee to the attention of his Representative and Senator.

The Wagner Bill is before Congress in the stage of preliminary committee hearings. What can the individual doctor do? In this connection it is well to read and digest the words of Dr. Nathan Van Etten, president-elect of the American Medical Association in his acceptance speech to the house of delegates: "Yesterday you adopted a report defining your position in relation to the proposed Wagner Health Bill. It will have small value, however, unless the whole medical profession of the United States is educated fully to understand it. Every delegate must realize his official obligations as never before and carry home to every single practitioner in his state a full consciousness of the importance of this declaration of principles. That practitioner is potentially one of the most powerful persons in the democracy. If he can be made to see his duty to his country and educate his patients to a realization of the dangers of centralized control of medical practice, your action of yesterday will be sustained. In the name of welfare, gentlemen of the House, the practice of medicine as you know it and as you hoped it would become is to be destroyed. The functions of the most highly educated group of professionals in the world are to be taken over by bureaus operated by adventurous amateurs. The time has come for the concerted action of every doctor in the United States."

Closely related to the controversy over the extent of need for governmental participation in medical practice was a report of the committee on the survey of the need for medical care. Dr. W. F. Braasch, Rochester, Minn., reporting for the committee, denied that the number of medical needy even approaches the forty million as estimated by various governments and agencies which have studied the problem. The chairman of the committee reported to the house of delegates that replies to questionnaires had been received from 20,199 physicians and dentists from seven hundred to sixty-three counties in thirty-nine states, representing a population (1930 census) of 43,790,068 persons. Approxi-

mately 17,000 of the replies were from physicians who report giving medical service without charge to 2,611,451 persons. Only about one-fourth of the physicians in the area studied replied to the questionnaire, so that the number of persons receiving gratuitous services may be conservatively set at double this figure. From the replies received the committee estimates that the number of people in the United States who are denied needed medical services is 40,000 and not 40,000,000 as maintained in the technical committee report before the National Health Conference.

The house of delegates approved of a plan whereby the council on medical education and hospitals will be in a position to enlarge its scope of activities particularly in the interests of pre-medical undergraduates and graduate medical education. There will be still closer co-operation with the many certifying boards of the specialties. The membership on the council will be increased from seven to nine. The members will serve for a term of nine years and will not be eligible for re-election. They will be elected by the House of Delegates from a list of nominees submitted by the Board of Trustees.

An amendment to the constitution was submitted by the judicial council concerning membership in the American Medical Association. This was offered because some local medical societies have as members Osteopaths and other irregular practitioners. The amendment specifies the requirement, "holding the title of Doctor of Medicine or Bachelor of Medicine." This amendment will be considered for the final action at the 1940 session.

Two resolutions, both emanating from the medical society of the State of New York (both inappropriate and uncalled for) were introduced. One requested that the house of delegates grant a seat to a woman delegate. Women have had this privilege since the founding of the society. As a matter of fact a lady delegate served in the house from the State of California in several sessions. The other resolution urged that membership in the American Medical Association be not denied solely on the basis of race, color or creed. The constitution declares the Association to be "a federacy of its constituent associations," membership in which derives solely from membership in component county or district medical socie-

ties. The constitution does not attempt to fix standards, other than professional, for membership in local county medical societies. The house rejected both these resolutions.

A resolution was adopted to the effect that directors of clinical pathological laboratories be graduates of medical schools and licensed physicians and that they had had three years work in clinical pathology. A resolution was adopted recommending that films and exhibits of medical subjects presented to the laity should be approved by State associations or County Medical Societies.

The House adopted a resolution asking Congress to provide funds for a new building for the Army Medical Library and Museum.

The farm securities administration in the field of medical care, was carefully considered; it was recommended that there be a better understanding between the state and county medical societies. Agreements made between the county medical societies and the farm security administration should be subject to the approval of the state association. The house of delegates upheld in principle the agreements made by the Indiana State Medical Association with the Farm Security Administration.

The second award of the distinguished service medal, which, last year was bestowed upon Rudolph Mathas, of New Orleans, went to Dr. James B. Herrick of Chicago, because of his outstanding contributions to the knowledge of coronary thrombosis. The two other names presented to the house of delegates, which, by ballot makes the final decision, were those of Dr. Chevalier Jackson, of Philadelphia, and Dr. Edward Jackson of Denver.

Approximately 250 scientific exhibits were housed on the second floor of the auditorium and 240 technical exhibits on the first floor and all available space in the large building was occupied by exhibits and section meetings.

The magnitude of the exhibits—both scientific and commercial—was bewildering and a sojourner worming his way through this intricate maze found difficulty in locating and concentrating upon the particular things in which he was specifically concerned. This was especially true of the scientific exhibits, carrying, as many did, practically demonstrations and descriptive films.

Especially important as a part of the annual session is the close relation between the Scientific Exhibit and the presentation of manuscripts in the scientific sections. For some years those who present new contributions in the various sections have had the opportunity to exhibit the actual materials with which they have worked, in the form of case records, microscopic slides, charts, diagrams and other material. The author of the manuscript is thus enabled to demonstrate at first hand to physicians who are especially interested in the details of his work, forming for those who attend the session a magnificent postgraduate opportunity not available in any other way.

The popularity of this feature is attested by the fact that many physicians spent almost their entire time during the week in the Scientific Exhibit. Every year there is an increased number of appeals that more time be given for attendance on the Scientific Exhibit.

Two hundred and seven physicians entered the golf tournament at the Norwood Hills Country Club on Monday. Many Illinois physicians participated and won trophies.

Following officers of the American Medical Association were elected:

President, Rock Sleyster, M. D., Milwaukee.

President-elect, N. B. Van Etten, M. D., New York.

Treasurer, H. L. Kretschmer, M. D., Chicago.

Speaker of the House, H. H. Shoulder, M. D., Nashville.

Vice-speaker, R. W. Fouts, M. D., Omaha.

Trustees, Roger Lee, M. D., Boston, and E. L. Henderson, M. D., Louisville.

Atlantic City was selected as the 1942 convention place. The 1940 meeting will be held in New York and the 1941 meeting will be held in Cleveland.

Finally, every doctor should follow up the recommendation of the House of Delegates relative to the Wagner Bill.

Personal letters to individual senators and representatives in Washington carry a tremendous appeal. Each one of the 170,000 doctors in America should constitute himself a committee of one to see that a resolution is brought before his County society supporting this action of the House of Delegates. That copies of any adopted resolutions should be forwarded not only to the senators and representatives comprising the con-

gressional representation of the doctor's own State, but also the chairman of the Senate Committee on Education and Labor, Senator Elbert D. Thomas of Utah. Copies should be sent also to the several members of the sub-committee having the Bill in charge, namely, James E. Murray of Montana, Vic. Donahey of Ohio, Allen J. Alender of Louisiana, Robert M. La Follette, Jr. of Wisconsin and Robert A. Taft of Ohio.

HOW OUR DOCTORS HAVE BEEN PUSHED AROUND

In the June issue of the *ILLINOIS MEDICAL JOURNAL* we reproduced from "*America's Future*" (Mid-Spring issue) an article under the same title by H. L. Mencken. In this issue we reproduce from the same magazine the legal and legislative show-down in Washington by Ray Tucker. We quote:

The stage has been set in Washington for a legal and legislative showdown on the grave issues of group health, indirectly sponsored by the Federal Government, and establishment of a nationwide system of socialized medicine. The outcome will determine whether these problems so vital to the individual and national well-being shall be subjected to revolutionary changes in treatment, or whether existing methods and standards shall prevail when sickness stalks a family.

The drama consists of two acts, but they dovetail with truly political artistry. The government's anti-trust suit against medical societies and individuals—among them the American Medical Association and the Medical Society of the District of Columbia—will soon come to trial. Meanwhile, the Wagner Bill inaugurating an expansive and costly state-federal health setup will undoubtedly reach the Senate floor for debate and action. For the next few months the problem of the sick man and what to do about him will dominate judicial and political platforms at Washington.

That the capital should be the setting for the group health and related controversies is no mere accident. Despite several earlier opportunities to prosecute medical organizations for alleged sabotage of socialized medicine movements, the Administration deliberately chose Washington so as to dramatize the issue and promote group health experiments elsewhere (under the aegis of

the Wagner Bill, if passed) should its anti-trust contention be upheld by the courts. Therefore, a survey of group health's origin here, the medical profession's reaction and alternative plans, and the government's stormy intervention on the side of the socializers is appropriate and opportune.

The question of socialized medicine first became an inflammable topic for Washingtonians in the summer of 1937, when there were vague rumors that 900 members of the Home Owners' Loan Corporation intended to form a medical cooperative. The profession paid scant attention to the movement until it was discovered, quite by accident, that HOLC had loaned \$40,000 from its treasury to finance the enterprise—a burst of generosity subsequently criticized by the House Appropriations Committee. Despite the extraordinary secrecy surrounding the beginnings, officers of the Medical Society of the District of Columbia learned that several of its members intended to serve on the staff of the Group Health Association, one has become medical director—Dr. Mario Scandiffio.

Now, the Society's by-laws require that if a member arranges with the government or a corporation for contract treatment, he must submit the agreement to a committee for approval. The underlying idea is to insure that the profession is not exploited—that medical care shall not be transformed into a mere commercial racket—that the personal relationship so essential to proper medical practice shall be preserved. Here is the excerpt from the ethical code of the American Medical Association (also incorporated in the Society's by-laws) governing this point: "It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patients, or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physicians and lowers the dignity of the profession."

Many distinguished physicians in Washington are employed as experts at government hospitals and they have never objected to submission of their contracts for the Society's approval. And never, when assured that medical ethics and standards and public interest were safe-guarded, has the Society registered objection to these arrangements. Dr. Scandiffio, however, refused to

permit a peek at his agreement with Group Health Association, and he was expelled in accord with the by-laws. Another physician resigned his Group Health connection in preference to losing membership in the Society and the standing which that gave him in his profession.

In negotiations with Group Health officials and lawyers during this period, the Society's spokesmen contended that the proposed setup was unsatisfactory for many reasons. For one thing, they insisted that it allowed the patient no choice of a physician—and Group Health directors admit as much, since there are even now only ten doctors on their staff; the sick man must accept whoever happens to be an expert in his particular pain. The medicos also argued that the arrangement was financially unsound—and the recent sharp increase in the association's rates bears out this prophecy.

About this time GHA called in "the law"—and the unjudicial attitude of the Department of Justice in siding with GHA throughout the controversy, not to mention other individuals and agencies in the Administration, constitutes one of the most disquieting elements in the situation. It poses the question of how impartial and scientific this or future administrations will be, once they extend their control into the field of medicine as utterly as the New Deal has in social, economic and political domains.

GHA asked Judge Jennings Bailey of the District Circuit Court of Appeals for a declaratory judgment on its status. Previously, U. S. District Attorney David A. Pine had held that GHA was a corporation engaged in medical practice—obviously an illegal procedure, for only an individual can practice medicine. But the District's Insurance Commissioner had classed GHA as an insurance enterprise but held that it was operating illegally. Judge Bailey ruled that it was neither a medical nor insurance entity, thereby leaving the question unsettled.

Now, here is where John Law entered in a rash and ruthless way. While Mr. Pine was contemplating an appeal in order to clarify the legal muddle, Assistant Attorney General Thurman Arnold—the witty, bombastic ex-Yale prof in charge of the anti-trust-division—publicly declared there was no need for an appeal, although that was precisely what the dilemma demanded. Mr. Pine did not appeal. As a result, three distinguished Washington physicians — Sterling

Ruffin, who has treated numerous Presidents; Prentis Wilson and E. W. Titus—sued for an injunction against GHA. It was not designed as a hostile action but as an attempt to determine once and for all whether the quasi-government project was legal.

Soon thereafter there were rumors of a Department of Justice investigation of the Society—this in the midst of litigation more or less friendly and aimed at an amicable settlement of the whole dispute. Mr. Arnold wrote the Society that numerous complaints had been lodged against the medical profession for its attitude toward group health, although he failed—and subsequently refused—to identify the complainants or enumerate the specific charges. Few days later a federal detective walked into the Society's offices, seized all records and scanned them for evidence of a recalcitrant position on the part of the physicians. Naturally, a wave of resentment swept through the medical profession at such precipitate procedure.

Meanwhile—and this appears to have special significance—under the auspices of Mrs. Eleanor Roosevelt, Josephine Roche and Surgeon General Parran a national health conference was convoked at Washington. It was, as the records reveal, stacked with proponents of socialized medicine and governmental incursion into the field of health. It adopted recommendations which were subsequently embodied in the Wagner Act. But to the physicians then under the shadow of government prosecution, the conference seemed designed to put them in the doghouse of public sentiment and to apply high-pressure politics in favor of Group Health and against its critics.

Next came a criminal indictment charging the AMA, the Medical Society and numerous prominent District of Columbia physicians with violating the anti-trust laws—an indictment understood to have been obtained only by the narrow margin of one vote. Without entering into legal technicalities, it alleges that the defendants, through the AMA and its state organizations, conspired to cast discredit upon colleagues who signed up with Group Health by expelling them from membership; to deprive them of the privilege of consultation with experts under penalty that the latter would be ousted if they participated in these conferences; to close hospitals which they allegedly control to the patients of

Group Health doctors. In short, the associations and individuals named in the indictment are charged with having used their prestige and position to prevent the successful operation and expansion of the mass medical movement.

The pending Wagner Bill was an indirect development of this fracas—an attempt to blanket the nation with the blessings which Group Health is supposed to confer on the 600,000 people of the Nation's Capital. It was hurriedly framed, and it provides, roughly, that upon compliance with loose and elastic requirements fixed by their own social welfare agencies, States may obtain vast sums from the federal government for curative treatment rather than preventive handling of the nation's major diseases. Nowhere can a more concise commentary on the measure be found than in a recent editorial in the *New York Times*, to wit:

"It is the conception not of medical scientists but of government officials who evidently believe that existing agencies have only to be enlarged in order to cope with the problem presented. For example, the Treasury Department, the Department of Labor and the Social Security Board would be entrusted with the proper distribution of medical care, and this for no other reason than that they now render some medical services through their special offices. These three agencies are directed by laymen.

"True, the bill would give them authority to appoint at least five medical advisory boards, but they are under no compulsion to accept technical advice. The state that petitions Washington for financial aid in carrying out its medical program must therefore deal with eight bodies. If it submits a plan of medical care that satisfies its own health department, the funds requested must be granted, no matter how low the standards set, leaving the advisory boards in a foolish position.

"Not the health of the nation as a whole has been considered, but the specific needs of mothers, children, the mentally afflicted, the tubercular and others who naturally fall under the jurisdiction of present government health agencies. No attempt has been made to envision the medical needs of communities and to correlate the provisions for meeting them. Apparently each head of a government health agency recommended expenditure which would permit him to cope on a larger scale with the particular aspect

of medicine that had been his past concern. . . . Health is not achieved merely by spending money."

A collateral criticism of the proposed program is that it was hammered into shape, not by experienced experts, but by politicians jealous lest a rival obtain more money and more power—by such people as Henry Morgenthau, Madame Perkins, Social Security Chairman Altmeyer.

The practical operation of Group Health at Washington has been beset with difficulties not denied by its directors. It was soon discovered that the original 900 members of HOLC constituted too small a number for financial solvency, and the system was expanded to include members of all federal agencies in the executive branch of the government.

If everybody eligible took advantage of the offer, it would mean that the members with their dependents would total half the population of Washington—thus necessitating a growth that would drive private practitioners out of business or into the group health movement itself.

Group Health sponsors, however, have been deeply disappointed in the public response to their medical offering. Although there are about 90,000 federal employees eligible for membership, the peaks so far has been 2600, and this figure has dwindled to about 2100 in recent months. The Group Health people attribute the losses to the increase in costs necessary to prevent operating deficits. But physicians insist that they are now treating many patients who tried the Group Health system, but became so dissatisfied that they quit. The medicos also say that numerous subscribers still call in their family doctors, but retain membership in the Group Health for fear that outright resignation might provoke disciplinary measures at their offices.

The original charge for medical and hospital care was fixed at \$2.20 a month for an individual and \$3.30 for a family, regardless of its size. The new scale of costs calls for \$2.20 a month for a single person, \$4 for man and wife, and \$5 a month for husband and wife and all dependents under eighteen years of age, no matter the number. For each dependent over 18 there is an additional charge of \$1, and for those over 21 the monthly cost is another \$2.20.

There is also a membership fee of \$10, payable at the rate of \$1 a month. In addition, each new

member must pay \$5 for a medical examination, with a \$1 charge for each dependent.

For the calendar year of 1938 the system operated at a \$12,000 deficit, consisting of \$7,000 in cash and \$5,000 in depreciation of equipment. The monthly income at the present moment approximates \$10,000, which must finance new capital outlays and operating costs. The salaries of the ten physicians range from \$3600 to \$7200 a year. Though seemingly low for experts, Group Health officials retort that the average income of all physicians in Washington is only \$1800 a year. In that estimate, however, they include the Capital's highest-salaried medicos and the vast number of newcomers who have only recently hung out their shingle.

It is, perhaps, impossible to obtain an impartial and detached judgment on the merits or demerits of the medical service provided by Group Health, in view of the prejudices and emotions the movement has stirred in the rival circles. But Dr. Richard H. Price, in resigning from the service, listed several grave indictments against it. Although his testimony is subject to some question because he has since returned to Group Health's staff, he charged the first time:

That patients must often wait for days, even weeks, for appointments.

That they were run through the government clinics "like a herd of sheep."

That many had not had the operations which were promised them.

That frequently, on home calls, a staff physician appeared who was a stranger to the patient. Dr. Price contended that the subscriber should be entitled to his "family doctor" at his home as well as at his office.

That, finally, members of the government association were not allowed to take sick leave for visits to clinics.

Perhaps the most—and only—constructive result of all this turmoil has been the establishment of a Mutual Health Service by the Medical Society for the benefit of low-income groups. Although it has been charged that they took this step in self-protection, the fact is that Washington physicians have been working on the scheme for several years. They proceeded slowly lest they promise more than they can perform (as they believe Group Health has done) frame an un-

sound program and thereby discredit this major experiment in inexpensive medical care.

The objectives are (1) to provide good medical care to subscribers (2) to guarantee subscribers free choice of physician (3) to cooperate with Group Hospitalization, Inc. (a private, non-profit agency) to the end that subscribers be assured medical and hospital care on a monthly payment basis. All physicians joining the Service must sign an agreement to charge only the stipulated fees.

Supervisory authority is vested in a Board of Trustees consisting of one member nominated by the U. S. Public Health Service, two nominated by subscribers; one by District of Columbia's health authorities; seven by the Medical Society, with the Society's secretary acting in an ex-officio capacity. An advisory committee consisting of three Society members shall have the following duties: (1) To review and decide complaints against patients and physicians (2) to review and approve payment of bills.

For the first year subscribers are limited to employed persons under 60 of sound mind and body, with annual income of \$2000 or less for single persons, \$2500 for husband and wife, with \$200 additional allowed for dependents. They are entitled to surgical, obstetrical and medical care of all kinds; X-ray and laboratory services, an anesthetist, and authorized consultant service. Total value of services available in any single year shall not exceed \$250 for a single person, \$350 for husband and wife, \$450 for a family.

Monthly dues are \$1.50 for a single person, \$2.50 for husband and wife, \$3.50 for a family. In adopting a fee schedule for medical services, the income level of the various groups and their monthly payments have been taken into account. Physicians participating must subscribe to the schedule of fees, which is now in preparation.

The central differences between these two set-ups appears vital to the whole group health controversy, to wit: (1) Under the private system the patient may choose his own doctor from among 800 rather than ten (2) He feels under no compunction to accept any kind of treatment for fear he may antagonize a government official and jeopardize his job by complaining or changing physicians (3) He is paying his own way instead of being subsidized, with the resulting im-

proved effect on his mental and physical state (4) A person's health is regarded as an individual matter rather than a social experiment. And it is obvious that in many instances a patient would not want his secrets of health to become a matter of departmental record—and curiosity.

There—believes the medical profession—is the battleground upon which the great question of government versus private control of medicine should be waged.

A SPECIAL ASSESSMENT OF TEN DOLLARS PER MEMBER LEVIED BY THE CALIFORNIA MEDICAL ASSOCIATION

Under date of May 15, 1939, an official notice concerning a special Ten Dollar assessment levied on all members of the California Medical Association having the status of active members, was sent to every California Association member.

An explanatory statement concerning notice of special assessment sent to members is as follows: To the Active Members of the California Medical Association:

Enclosed herewith you will find a copy of a notice of a special assessment in the sum of Ten (\$10) Dollars, payable June 1, 1939, or within sixty (60) days thereafter.

This assessment was levied by the House of Delegates at Del Monte, California, May 3, 1939. The assessment was contained in a resolution adopted by the House of Delegates providing for the creation of a Committee on Public Education and for the employment of a full-time public relations counsel. The resolution states that the purpose of levying a special assessment is to secure sufficient funds with which to carry on a campaign of public information and education with respect to "public health and welfare."

The resolution of the House of Delegates definitely "ear-marked" the funds received under this special assessment as follows: "All moneys collected under this resolution shall be carried in a special fund and used only for the educational purposes contemplated in this resolution." In addition, any moneys remaining in the special fund, after discharge of the Committee on Public Education by the House of Delegates, is to be returned pro rata to the then members of the Association who paid the special assessment.

The resolution specifically directed the Council of the California Medical Association to arrange

for the collection of the \$10 special assessment.

The chairman of the Council (with the approval of the Council) is directed to appoint five members of the Association to the Committee on Public Education (the House of Delegates named the Speaker and the Chairman of the Council as two additional members). Also, the Council is authorized to levy further special assessments, and is directed to do so if funds are found to be necessary by the Committee on Public Education.

Signed:

The Council of the
California Medical Association.

ORGANIZED PAYMENTS FOR MEDICAL SERVICES

It would stretch the imagination of a social planner to devise any scheme for the organized payment for medical services that is not described in this publication of the Bureau of Medical Economics of the American Medical Association on "Organized Payments for Medical Services." Several hundred plans for medical care of the indigent involving governmental support and medical society management are explained. Social Security legislation has brought about changes in medical arrangements reaching into almost every locality in the United States and affecting health departments, medical societies, and state and local governments. Types of plans proposed by the Farm Security Administration to provide medical services to Administration clients in 127 counties and covering 100,000 low income families are described. Medical societies have organized postpayment and prepayment plans of medical care offering a wide selection of types. Some provide for a cash indemnity to be paid to the insured with which he can purchase his own medical service and others provide medical service directly.

Industries, unions, fraternal organizations, and all sorts of mutual societies provide medical benefits for their members by a variety of prepayment devices. Some 3,000,000 persons are covered by group hospitalization plans, which show a wide variety of relations with state and county medical societies. Commercial insurance companies, all of whom pay benefits in cash, are also entering this field on a large scale. It is estimated that approximately \$300,000,000 in

cash is paid out annually by insurance companies to assist in paying medical bills.

Excerpt. Organized Payments for Medical Services pp. 185.

The House of Delegates of the American Medical Association has endorsed cash indemnity prepayment plans, but has not sought to prohibit any of its component societies from cooperating with or organizing other types of prepayment for medical service provided their character is not such as to render it impossible to give good medical service.

The number and variety of the plans for medical services—operating and proposed, postpayment and prepayment, service and cash, medical society and other organization sponsored—give proof of the efforts that are being made to supplement the private practice of medicine and indicate a desire to discover, by social experimentation, a solution of local medical problems.

WINNER OF THE 1939 MISSISSIPPI VALLEY MEDICAL SOCIETY CONTEST ANNOUNCED

The second annual Essay Contest of the Mississippi Valley Medical Society, "for the best unpublished essay on a subject of practical and applicable value to the general practitioner of medicine" has been concluded. The Annual Awards Committee of the Society has announced that Frederick F. Boyce, A. B., M. D., F. A. C. S., of New Orleans, Assistant Professor of Surgery, Louisiana State University, is the winner in a closely contested contest to which many excellent essays were submitted. The winner receives a \$100.00 cash prize, a gold medal, a certificate of award and an invitation to present his essay before the annual meeting of the Mississippi Valley Medical Society. Dr. Boyce will address the Society on the subject of his winning essay, "Toxic Thyroid Disease as a Surgeon Would Have the General Practitioner Conceive It, with a Special Note on the Liver Factor," at Burlington, Iowa, on Sept. 27, 28, 29. His paper will be published in the January issue of the *Mississippi Valley Medical Journal* (incorporating the *Radiologic Review*). The winner last year was Dr. I. C. Brill, of Portland, Oregon, Assistant Professor of Medicine, University of Oregon Medical School, for his essay, "Failure of the Circulation: Types and Treatment," which ap-

peared in last January's issue of the Society's official publication. Because of the nation-wide interest in the Essay Contest it will be repeated again next year, but plans for the 1940 contest will not be available until November.

TRAFFIC OFFICERS GIVEN FACTS ON DRINKING DRIVERS

Due to the looseness of existing traffic codes the drinking driver is given a valid, though somewhat left-handed argument when it comes to showing that a few libations do not impair his ability as a motorist. He can usually show that his driving is done more carefully, and with less danger of accident, than that of the epileptic, who might fall unconscious at the wheel, and others with unbalanced minds or unbalanced nerves, who are permitted to operate motor vehicles without the slightest restriction under the law.

This was stated to the first Pacific Coast Traffic Officers Training School at the University of California by Dr. George K. Rhodes, associate professor of clinical surgery in the University's medical school in San Francisco. Doctor Rhodes suggested that the best way for the public to upset that dangerous argument would be to devise a system whereby the prospective driver would be subjected to a medical examination and other tests.

Doctor Rhodes presented figures tending to show that 46 per cent of the traffic arrests are for drunken driving and that about 12 per cent of the average driving public are suffering from varying degrees of intoxication. Answering the question as to when a driver may be considered intoxicated, Doctor Rhodes said that a concentration of one-tenth of 1 per cent alcohol in the blood would begin to show indications of intoxication. A concentration of between 1-10 and 2-10 of 1 per cent would show actual intoxication, and from 2-10 to 3-10 of 1 per cent would show a dangerous degree of intoxication, particularly for the man himself, so dangerous in some instances that artificial respiration might be needed.

One out of every 250 drivers may figure to be intoxicated in some degree, Doctor Rhodes said. The peak age for drunken driving appears to be between 25 and 30.

—California & Western Medicine.

DOCTORS IN MUSIC

Do you or any part of your medical friends play any musical instrument? Mead Johnson & Company is now preparing a new publication devoted to the hobbies and achievements of physicians, past and present, in the field of music. Doctors' orchestras, doctors' glee clubs, historical or biographical items, with or without illustrations, will be welcomed. Please send your item to Mead Johnson & Company, Evansville, Ind. (If you have not received your free copy of their recent publication "Parergon," devoted to fine art by doctors, send for it now.)

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
Ralph Peairs, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

R. K. Packard, M. D.
C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.

Address all letters and communications to the Chairman.

Although most of the oracles and commentators from Washington have insisted for the past three months that the so-called Health Bill, officially designated as S1620 has no chance of passage at this session of Congress, hearings on the bill continue. Those of us, who read the *JOURNAL* with any degree of thoroughness have been greatly interested in the testimony given by members of the medical profession at hearings of the Committee appointed to study the bill. From the testimony so far reported in the *JOURNAL*, the medical profession has made a most excellent presentation of the reasons they are against the proposed bill. Also there has been a very apparent lack of knowledge on the part of some of the Senators on the Committee as to the exact contents of the bill not to mention the implied meanings and apparently all inclusive generalities of some of the provisions. The statements of the Doctors appearing before the Committee has brought many of these controversial question out into the open and has undoubtedly strengthened the position of the opponents of the bill at the same time weakening the proponents. It is to be hoped that all of you have read the Organization Section of the June 10 and 17 issues of the *Journal of the American Medical Association*. If you have failed to do so up to this time, get out these two issues and read them carefully, for they will give you a large amount of authoritative, up-to-the-minute facts and figures which should be of great assistance in talking to the laity on this subject.

The medical profession is receiving assistance in their fight against the Wagner Health Bill from the Committee to Uphold the Constitution, who published the Magazine, *America's Future*, a copy of which has been sent to every member of the medical profession in the United States. It is reported that they are increasing the scope of their work, either directly or through affiliated

organizations and are to hold meetings in the principal cities of the nation to acquaint the business public of the dangers in this bill. It seems little to ask that the medical men of Illinois as well as the rest of the states of the nation should cooperate in making these meetings successful when they are held in their community. So when you receive literature which from its external appearance makes you immediately consider filing the same in the waste basket, take time to read it, particularly when it is in regard to this bill. Surely every man practicing medicine in the United States can afford a little time, energy and if need be, money to carry on an educational campaign amongst the general public, who after all know little or nothing about health matters except what they are told by press, politicians or the medical profession. Surely the last named should be in the best position to explain health affairs. To enter the lists of the guessers, the writer believes that even though nothing is expected to be passed by the present Congress, the campaign will be continued under the able direction of that wily politician, Senator Wagner, and much will be done during the recess between the closing of the present Congress and the opening of the next. We have been most fortunate that other more pressing questions have delayed definite action on this bill up to this time and we should redouble our efforts during the respite given us.

The report of the Chairman of the Legislative Committee of the Illinois State Medical Society at the last meeting of the Council was most encouraging. The accomplishments of this Committee alone, are more than ample recompense for the few dollars paid annually by the members of the Society. Without their efficient work, the lobbies and special pressure groups would long ago have changed the Medical Practice Act of Illinois and let down the bars to the sects, in such a manner that the practice of medicine

would have been demoralized. Whenever the Chairman of the Committee, Dr. John Neal asks you to contact a Senator or Representative, do so at once, best by a personal interview.

You will note a few changes in the personnel of this Committee as appointed by the new Chairman of the Council, Dr. L. E. Day. These changes were made either at the request of the former member or as a result of his inability to serve longer. We will try to continue to study the economic problems of the profession, particularly in Illinois and report to you regularly. We ask for your cooperation in the future as in the past.

E. S. Hamilton, M. D., Chairman.

FINAL LEGISLATIVE BULLETIN

A liberalistic tendency mistaken in many quarters for a trend toward letting down the bars generally, characterized and greatly complicated legislative activity at Springfield during the recent regular session of the General Assembly. The illness of Governor Horner, the domination of the minority party in the House and dissension in the ranks of the majority party added to the confusion and made of the session a field day for political bargain-masters and legislative traders.

Organized groups of all kinds who could class themselves as "little fellows" or "underdogs" took it, and not without reason, that now was the time to capture legislative advantages. Vigorous and astute attempts were made to capitalize on the general prevailing sympathy toward the underprivileged. This was true in the field of pensions of all kinds, salary schedules for police, firemen and other classes of local employes, workmen's compensation and particularly in health and medicine. This situation required the most careful observation and energetic action on the part of your Legislative Committee in performing its function concerning the multitude of proposals bearing upon medical matters.

Bills proposing the independent licensure and great expansion of the field of practice of each of the leading medical cults were offered. Another bill proposed to legalize the practice of medicine by non-profit corporations, a measure that would in fact set up business enterprises in the practice of medicine with physicians as the "hired help." Several old age pension bills car-

ried riders adding extra compensation for medical care which would have opened the way for endless abuse. In the field of public health were bills proposing the periodic medical examination of food handlers, the licensure of restaurants, the establishment of cancer diagnostic service and on many other subjects. These references reveal the complexity of the legislative atmosphere as the record of the General Assembly unfolded.

The osteopathic bills followed a typical course of this type of proposal in the General Assembly. Introduced early in the session, well-financed and ably handled, HB 293 proposed to give osteopaths full and unlimited privileges of practice in medicine and surgery and an independent system of registration as well. Consideration in the General Assembly was serious enough to cause the Committee on Economy and Efficiency to give two full evenings to hearings on this measure. On Tuesday evening, March 6, the osteopaths represented by an able attorney and the outstanding speakers from their ranks made an eloquent plea for the bill which manifestly impressed the members of the Committee. A week later your Legislative Committee was heard in a two-hour hearing devoted to the bill. Decisive defeat in Committee came only after this energetic action which involved a great deal of research, time and effort.

Feeling that "over-ambition" and "asking too much" caused defeat the osteopaths came back promptly with SB 292 which requested independent licensure and the privilege of doing only "minor surgery," whatever that means. This bill obtained a "do pass" committee endorsement and reached passage stage in the Senate before it was killed.

A novel approach toward breaking down the standards of medical practice materialized in HB 872 which proposed to consolidate all drugless practitioners under one law and set up an independent registration system. This was a left-handed attempt since the present medical Practice Act provides for the licensure of all recognized types of practitioners.

The *naprapaths* attempted to intrigue the General Assembly into granting an independent licensing system by the implication that in naprapathy at long last had been found a cure for diseases of the "connective tissues." HB 327 providing for an independent licensing system of naprapaths got a "do pass" endorsement from the House Committee on Public Welfare and reached third reading in the House before it was killed.

The independent licensure of chiropractors was proposed in HB 282, introduced early in the session and

followed up with astute energy. It obtained the "do pass" signal first from the House Committee on Public Welfare and later from the Committee on Appropriations and finally reached third reading before it was killed.

Two bills proposing a separate and independent licensing system for physiotherapists were introduced, SB 390 and HB 1068. The latter had a "do pass" blessing of the House Committee on License and Miscellany and reached third reading before it was killed.

A profession of "consulting psychologists" would have been created, an independent licensing system established therefore and practice as consulting psychologists limited to licentiates by SB 467. This Bill received a "do pass" endorsement of the Senate Committee on Judiciary and was passed by the Senate but fell in the house.

These bills relating to registration of various kinds of practitioners have been discussed in some detail to emphasize the wide range, the appealing nature and the insistent repetition of well devised attempts at breaking down the standards of medical practice in Illinois. This experience demonstrates the necessity for steadfastness of purpose, constant alertness and energetic action on the part of those who would maintain medical practice on the highest practical level and seek to improve these standards. Only confusion of the public, legal recognition of unmerited qualifications and a consequent lowering of standards could possibly result from creating separate licensing systems for the various classes of practitioners. If one class is so privileged the logical outcome would be to extend it to all.

No proposal to establish an official system of socialized medicine was introduced in Illinois, but the influence of the Wagner Bill on medical care in Congress was reflected in HB 977 which would have legalized the practice of medicine by non-profit corporations. Good in appearance to the casual reader, this proposal in fact would have made legal the creation of commercial enterprise in the field of medicine and the relegation of physicians to the status of hired help. The measure was killed in Committee.

Numerous other bills, more than ever before, relating to health and medicine in one way or another came before the General Assembly. A relatively few had solid merit. The majority were either fundamentally contrary to the public interests or at best of no significant public value. A list of these bills showing the disposition of each is appended.

A mere glance at the list reveals the magnitude of interest in medical and health matters and gives an idea of the volume and meticulous character of the work the Illinois medical Society is called upon to perform.

Your Committee is indebted to the officers and the individual members of the State and local societies for unfailing cooperation and encouragement. For this the Committee herewith expresses its sincere gratitude and appreciation.

MEDICAL BILLS

HB 293	(DeGafferelly) makes osteopaths equal in every respect to M. D.'s Killed in committee	Defeated
SB 292	(Kielminski) permits osteopaths minor surgery and creates independent examining board.	Defeated
HB 282	(Allison) creates independent chiropractic examining board	Defeated
HB 327	(Streeper) licensure of naprapaths.	Defeated
SB 390	(McDermott) licensure of physiotherapists.	Defeated
HB 1068	(Petroni) licensure of physiotherapists....	Defeated
HB 876	(Adduci) licensure of all Drugless Healers.	Defeated
SB 467	(Benson) creates profession of consulting psychologists and provides registration....	Withdrawn
HB 977	(Ryan, Frank) legalizes the practice of medicine by non-profit corporations....	Defeated
SB 42	(Bidwell) increases fine from \$1,000 to \$5,000 and prison term from 5 to 10 years for violation of narcotic law.....	Failed?
SB 32	(Connors) adds cannabis to narcotic law....	Failed?
HB 111	(Weber) adds cannabis to narcotic law....	Failed
HB 975	(O'Neill, Lottie Holman) excludes certain forms of cannabis from narcotic law..	Failed
HB 230	(Streeper) would require medical examination of food handlers at 90 day intervals....	Killed
HB 915	(Committee on Public Welfare) sets \$35 maximum monthly old age assistance but provides additional special awards for medical care	Killed
SB 9	(Heckenkamp) sets \$30 maximum monthly old age assistance but provides \$5 to \$15 extra for medical care.....	Failed
SB 371	(Marovitz) gives hospitals lien rights for services rendered in certain injury cases against awards to patients.....	Failed
HB 978	(Ruddy and E. A. Greene) provides liens similar to SB 371.....	Failed
SB 52	(Crisenberry) gives hospitals lien rights against awards to injured persons for services rendered. Passed both Houses..	Failed
HB 43	(Dinneen) permits absentee vote by ill persons upon M. D. certificate.....	Failed

- HB 203 (Edwards and DeGafferly) permits absentee vote by physically ill.....Failed
- SB 200 (Dixon) permits absentee vote to physically ill. Passed Senate.....Failed
- HB 65 (Thornton) provides that a penitentiary M. D. and local M. D. shall conduct an examination to determine whether a convict is insane or feeble-minded prior to his release. Passed House.....Passed
- HB 110 (Weber) requires licensure of private hospitalsKilled
- HB 176 (Tuttle) repeals hygienic marriage law.....Killed
- HB 506 (Jenkins) prohibits M. D.s from testifying in civil actions as to patient's health without patient's consent.....Failed
- HB 644 (Smith, G. H.) makes chemical tests for alcohol in defendants acceptable as court evidenceFailed
- HB 922 (Smith, G. H.) legalizes tests for alcohol similar to HB 644. Passed House...Failed?
- HB 612 (Allison) limits future M. D. license to citizens of United States.....Failed
- SB 241 (Menges) limits future medical licenses to citizens of United States.....Failed
- HB 537 (Saltiel) regulates optometry similarly to SB 457. Passed House.....Doubtful
- SB 457 (Keane) defines optometry and regulates practiceFailed
- SB 148 (Heckenkamp) prohibits sale of glasses except on prescription of optometrist or M. D.Failed
- HB 1090 (Saltiel) makes more specific prenuptial medical examinations, allows marriage of infected under certain conditions and requires tests in approved laboratories.....Doubtful
- HB 391 (Saltiel) requires blood test for syphilis of pregnant womenPassed?
- PUBLIC HEALTH BILLS**
- SB 555 (Bruon, Connors, Keane & Searey) legalizes and regulates non-profit hospital corporationsPassed?
- HB 969 (Cutler) would transfer supervision of maternity hospitals from Department of Public Welfare to Department of Public Health.Passed?
- HB 324 (O'Neill, L. H.) sets up cancer diagnostic service in Department of Public Health and appropriates \$24,500 for same. Became a law without Governor's approval....Passed
- HB 1065 (Schnackenberg) creates division of cancer control in Department of Public Health and makes appropriation therefor.....Passed?
- HB 412 (Schnackenberg) creates code division of cancer control in Department of Public HealthVetoed
- HB 138 (Hruby and Warfield) requires restaurants, etc., to maintain separate and accessible toilet facilities for patrons.....Failed
- SB 109 (Madden) would require Department of

- Public Health to license all restaurants, etc.Failed
- HB 224 (Powell) establishes State Tuberculosis Sanitarium and appropriates \$1,000,000....Failed

DENTISTRY BILLS

- SB 337 (Connors) regulates dental laboratories by Department of Registration and Education.Failed
- SB 461 (Gunning) includes under Dental Practice Act persons who own or operate dental parlorsFailed
- HB 584 (Greene) prohibits advertising of dentistry at cut rates.....Failed
- HB 655 (Stewart) establishes standards of practice for dentistryFailed
- HB 712 (Powell) prohibits a licensed dentist from owning or operating a dental office other than that in which he gives personal service.Failed?
- HB 886 (Keller and Kelsey) would regulate practice by dental hygienists.....Failed
- HB 903 (Stewart) includes owners of dental parlors in Dental Practice Act.....Failed?

PHARMACY BILLS

- HB 289 (Crowley) prohibits sale of intoxicating alcohol by drug stores, etc., except on prescription by M. D.....Failed
- HB 752 (Kuklinski and F. Ryan) sets up detailed regulations for pharmacists.....Failed

Respectfully submitted

Mather Pfeifferberger, M. D.,
Robert H. Hayes, M. D.,
J. R. Neal, M. D.,
Legislative Committee.

Correspondence

PROMISED CIVIL SERVICE RECLASSIFICATION FOR PHYSICIANS IN STATE INSTITUTIONS

Law Offices

Lancaster & Nichols

Quincy, Ill.

June 9, 1939

Dr. Thomas B. Knox,
Counsellor, 6th District,
Illinois State Medical Society,
Majestic Building, Quincy, Ill.
Dear Doctor Knor:

Further answering your inquiries will state that the Illinois State Civil Service Commission is at present giving serious consideration to the classifications for physicians employed in institutions in the State of Illinois and it is the expecta-

tion of our Commission to have a complete reclassification in a very few weeks.

We are grateful for the assistance we have received from the medical organizations. We are planning to reclassify all attendants and give a general examination for this classification at an early date in July. This should aid the medical authorities greatly in carrying on their work in State institutions. It is our belief that they have been handicapped by the lack of experienced attendants employed at these institutions. It is our hope that we may be able to fully overcome this.

W. Emery Lancaster.

THE INVENTION AND EARLY USE OF THE MURPHY BUTTON

Chicago, June 3, 1939.

To The Editor:

Relative to the conflicting data pertaining to the origin and early use of the Murphy Button, the quotation I mention below I feel is distinctly confirmatory.

The following data is taken from a paper delivered by Dr. W. W. Musgrove, before the Winnipeg Medical Society, in May, 1935:

"After repeated experiments on dogs, he (Murphy) used it on man and proved its worth in the anastomosis of the hollow peritoneal coated viscera. He published a paper entitled "A Contribution to Abdominal Surgery; Ideal Approximation of Abdominal Viscera Without Suture," in the North American Practitioner of November, 1892, about forty-three years ago. In it he first described this ingenious device and its use, etc."

PHILIP H. KREUSCHER, M. D.

AMERICAN CONGRESS OF PHYSICAL THERAPY

The 18th annual scientific and clinical session of the American Congress of Physical Therapy will be held September 5, 6, 7, 8, 1939 at the Hotel Pennsylvania, New York City. Preceding these sessions the Congress will conduct an intensive instruction seminar in physical therapy for physicians and technicians—August 30, 31, September 1 and 2.

Physicians are urged to plan their vacation for these periods and bring their families to New York for the World's Fair. Ample time has been provided for during the convention to visit the fair and to enjoy the various activities of America's metropolis.

While the convention proper will have numerous special program features of scientific interest, the added attraction of the World's Fair should make it ex-

tremely worth while for every physician to come to New York and spend a most profitable vacation.

The instruction seminar should prove of unusual interest to physicians and technicians. The clinics which comprise half of the schedule make this course outstanding for its practical value. As in the past outstanding clinicians and teachers will participate. Registration is limited to 100 and is by application only. For information concerning seminar and preliminary program of convention proper, address American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

THE AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY

The first American Congress on Obstetrics and Gynecology is to be held in Cleveland, Ohio, from September 11-15, 1939. This important meeting comes at a crucial time in American Medicine. The problems associated with human reproduction have become of paramount importance arousing the intense interest of the public and the profession. The meeting will provide the first opportunity for all the interested groups of workers to assemble together. Doctors, nurses, hospital administrators and public health workers will meet and discuss their mutual problems and correlate their many ideas. A large and representative attendance is necessary to assure the success of this meeting. Already more than 1400 advance registrations have been received.

INSTITUTE FOR CONSIDERATION OF THE BLOOD AND BLOOD-FORMING ORGANS

The University of Wisconsin Medical School is to conduct an Institute for the Consideration of the Blood and Blood-Forming Organs, September 4-6, 1939. The program is to include papers and round-table discussions by European and American workers in the field of hematology. In addition to the discussions, the following formal papers are to be presented:

Dr. L. J. Witts, Oxford, England, Anemias Due to Iron Deficiency.

Dr. Cecil Watson, Minneapolis, The Paraphyrins and Diseases of the Blood.

Dr. Cornelius P. Rhoads, New York, Aplastic Anemia.

Dr. E. Meulengracht, Copenhagen, Denmark, Some Etiological Factors in Pernicious Anemia and Related Macrocytic Anemias.

Dr. Harry Eagle, Baltimore, The Coagulation of Blood.

Dr. George R. Minot, Boston, Anemias of Nutritional Deficiency.

Dr. Russell L. Haden, Cleveland, The Nature of the Hemolytic Anemias.

Dr. Jacob Furth, New York, Experimental Leukemia.

Dr. Claude E. Forkner, New York, Monocytic Leukemia and Aleukocythemias.

Dr. Edward B. Krumbhaar, Philadelphia, Hodgkin's Disease.

Dr. Louis K. Diamond, Boston, The Erythroblastic Anemias.

Dr. Edwin E. Osgood, Portland, Marrow Cultures.
Dr. Charles A. Doan, Columbus, The Reticulo-Endothelial System.
Prof. Hal Downey, Minneapolis, Infectious Mononucleosis.
Dr. Paul Reznikoff, New York, Polycythemia.
Physicians and others who are interested are cordially invited. A detailed program may be obtained by addressing Dr. Ovid O. Meyer, Chairman of Program Committee, University of Wisconsin Medical School, Madison, Wisconsin.

SPECIALISTS PLAN MEET IN CHICAGO
IN OCTOBER

The forty-fourth annual convention of the American Academy of Ophthalmology and Otolaryngology will

be held in Chicago October 8-13 at the Palmer House, a bulletin announces.

The academy has a membership of about 2,800 eye, ear, nose and throat specialists and the attendance at meetings is usually well over 2,000. It is said to be the largest organization of specialists in the United States.

About half the program is devoted to formal addresses, but fully half the week's activities consist of "instructional courses," in which the doctors go to school in earnest, with hundreds of eminent specialists as their instructors.

Dr. George M. Coates, Philadelphia, is president this year and Dr. Albert C. Snell, Rochester, N. Y., is president-elect.

POSTGRADUATE COURSES IN OBSTETRICS
AND PEDIATRICS TO BE REPEATED
AT THE UNIVERSITY OF ILLINOIS
COLLEGE OF MEDICINE

The Departments of Obstetrics and Pediatrics of the University of Illinois cooperating with the staffs of the medical schools of Chicago and the State Department of Public Health, will again offer to physicians or Illinois an intensive one week's course in obstetrics and pediatrics at the Research and Educational Hospitals. The course begins each Monday morning at nine o'clock and ends at noon on Saturday. The courses begin July 10 and end with the week of August 28.

As seen by the schedule, the course will be of practical value to the family physician. It will include bedside clinics, antepartum and postpartum care, manikin, demonstrations, didactic lectures, care of the newborn and premature infant, child-health problems, immunization procedures, and round table discussions on many important obstetric and pediatric problems.

The staff members of all Chicago Medical Colleges are participating in giving the course and will include such Obstetricians and Pediatricians as Doctors W. C. Danforth, F. H. Falls, F. L. Adair, Joseph Baer, A. F. Lash, W. H. Browne, Charles Newberger, Julius Hess,

Clifford Grulee, Arthur Parmalee, Isaac Abt, Maurice Blatt and H. E. Irish. Opportunity is given for individual consultation work with many of these men.

The registration is limited to 20 each week. Physicians outside Chicago are given preference. Physicians are urged to make their reservations early as experience has shown in the last two years that the courses have been given, that the places will be filled rapidly. A limit is placed on the class number in order to preserve the conference type of instruction that has been so enthusiastically received by the physicians attending in the past two years.

The registration fee of \$10.00 is the only fee required. Application should be accompanied by the registration fee and should be sent to Mr. G. R. Moon, 1853 West Polk Street, Chicago, Illinois.

APPLICATION BLANK

Name.....M. D. Age..... Date of Graduation.....
Street AddressCity.....
Member of.....County Medical Society (not required)
Registration Fee \$10.00.
1st choice—week of
2nd choice—week of
3rd choice—week of
Excellent living accommodations can be obtained at the nearby students' Y. M. C. A. at reasonable rates.
Make checks payable to the University of Illinois, College of Medicine.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 A. M.	Conference Obstetrics	Lecture Pediatrics	Lecture Obstetrics	Lecture Pediatrics	Lecture Obstetrics	Lecture Pediatrics
			Obstetrical Dispensary—Out Patient Pediatric Dispensary—Out Patient Pediatric Dispensary			
10-12 A. M.			ROUND TABLE DISCUSSIONS			
1-2 P. M.	Obstetrical Subjects	Pediatric Subjects	Obstetrical Subjects	Pediatric Subjects	Pediatric Subjects	
2-4			Ward Walks—Research Hospital Obstetrics—Pediatrics			
4-5 P. M.	Manikin	Pediatric Consultation Hour	Obstetrical Consultation Hour	Manikin	Pediatric Therapeutic Procedures	
5-6 P. M.	Manikin			Manikin		
6 P. M. to 4 A. M.			Deliveries Home and Hospital			

ILLINOIS PHYSICIANS WHO REGISTERED AT THE ST. LOUIS CONVENTION OF THE AMERICAN MEDICAL ASSOCIATION ARE:

(Registered Tuesday):

- Abt, A. F., Chicago, Y.M.C.A.
 Ackerman, W., Chicago.
 Adams, W. E., Chicago.
 Allen, A. V., Chicago.
 Anderson, II, H., Chicago.
 Anderson, O. N., Chicago.
 Anslinger, C. J., Mt. Vernon.
 Apfelbach, C. W., Chicago.
 Arestad, F. H., Chicago.
 Arnovitz, E. M., Granite City.
 Aronow, J., Chicago.
 Asbury, E. C., New Baden.
 Baer, J. L., Chicago.
 Baldree, C. E., Jr., Belleville.
 Ball, W. G., Bloomington.
 Barborka, C. J., Chicago.
 Barker, H. J., Chicago.
 Barton, P. C., Chicago.
 Bauer, W. W., Chicago.
 Bechtold, E., Belleville.
 Beck, J. C., Chicago.
 Beck, W. C., Chicago.
 Bell, C. E., East St. Louis.
 Bellinger, J. F., Collinsville.
 Bellows, J., Chicago.
 Benjamin, R. L., St. Anne.
 Bernstein, C., Chicago.
 Bernstein, T. B., Chicago.
 Berry, R. C., Livingston.
 Betlach, C. J., Chicago.
 Biehn, J. F., Highland Park.
 Bihss, F. E., East St. Louis.
 Bing, F. C., Chicago.
 Birch, Carroll L., Chicago.
 Blatt, M. L., Chicago.
 Bohning, Anne, Chicago.
 Bohrod, M. G., Peoria.
 Barnsback, R. S., Edwardsville.
 Bothman, L., Chicago.
 Boyd, J. R., Oak Park.
 Boyd, O. B., East St. Louis.
 Boynton, C. O., Sparta.
 Brachin, R. E., Kenilworth.
 Branom, L. R., Lincoln.
 Braun, W. C., Chicago.
 Breed, J. E., Chicago.
 Brill, H. M., Chicago.
 Brown, W. W., Collinsville.
 Brown, W. L., Chicago.
 Brunschwig, A., Chicago.
 Cables, H. A., East St. Louis.
 Camp, H. M., Monmouth.
 Campbell, P. A., Chicago.
 Cariss, D. G., Granite City.
 Casner, A. J., Bloomington.
 Clark, D. F., Evanston.
 Chainski, E. L., Chicago.
 Chandler, F. A., Chicago.
 Cohen, J., Granite City.
 Colteaux, J. A., Roberts.
 Cooper, R. M., Normal.
 Connelly, Marie L., Chicago.
 Coulter, J. S., Chicago.
 Cross, R. R., Dahlgren.
 Culpepper, W. L., Chicago.
 Cutter, W. D., Chicago.
 Denenholz, E. J., Chicago.
 Davenport, F. N., Moline.
 Davidsohn, I., Chicago.
 Davis, I. W., Belleville.
 Davis, J. W., Anna.
 Davis, L. Y., Baylis.
 Davis, N. S., III, Chicago.
 Decker, F. II., Peoria.
 Decker, V. O., Metropolis.
 deTakats, G., Chicago.
 Develling, J. R., Rosiclare.
 Dew, W. A., Belleville.
 Dewein, E. G., Freeburg.
 Dice, H. F., Ridgefarm.
 Dolard, H. L., Great Lakes.
 Donahue, J. J., East St. Louis.
 Dudley, C. V., Chicago.
 Dudley, C. B., Charleston.
 Elworthy, R. W., Elmhurst.
 Engbring, G. M., Chicago.
 Eyerly, J. B., Chicago.
 Fara, F. J., Cicero.
 Farrier, R. C., East St. Louis.
 Farrington, J. D., Chicago.
 Fenger, F., Chicago.
 Field, Elsie H., Urbana.
 Finkle, A. M., Chicago.
 Fishbein, M., Chicago.
 Fishbein, W. I., Chicago.
 Fisher, J. A., Metropolis.
 Fleming, J. F., Chicago.
 Ford, H. L., Champaign.
 Foulon, I. L., East St. Louis.
 Frech, L. O., Decatur.
 Freilich, H. H., Chicago.
 Freidman, T. B., Chicago.
 Gale, F. C., Pekin.
 Galloway, C. E., Evanston.
 Giles, R. C., Chicago.
 Goebel, A. E., Montrose.
 Goldfine, A. H. C., Chicago.
 Goldberg, B., Chicago.
 Golden, I. J. K., Chicago.
 Gradle, H. S., Chicago.
 Greaves, R. H., Collinsville.
 Gregg, L. A., Chicago.
 Greene, Bernard L., Elgin.
 Griffith, W. A., East St. Louis.
 Guibor, G. P., Chicago.
 Guild, W. A., Chicago.
 Gunn, F. H., East St. Louis.
 Guttman, M. R., Chicago.
 Guy, C. C., Chicago.
 Hamilton, E. S., Kankakee.
 Hall, E. S., McLeansboro.
 Hayden, A. A., Chicago.
 Hale, C. L., Chicago.
 Harris, E. H., Winnetka.
 Hartenbower, G. E., Bloomington.
 Havens, A., New Philadelphia.
 Hayden, H. C., Chicago.
 Hecht, R., Chicago.
 Heinrichsen, C. J., Chicago.
 Hermann, E., Highland.
 Herzog, R. S., Chicago.
 Heyer, O. C., Edwardsville.
 Hibbs, W. G., Chicago.
 Hill, G. R., Fairfield.
 Hines, L. E., Chicago.
 Hirsch, J. A., Edwardsville.
 Hodel, E. S., Morton.
 Hoffman, M. J., Chicago.
 Holcombe, R. L., Marine.
 Hoover, S. R., Quincy.
 Howell, K. M., Chicago.
 Jenkins, H. P., Chicago.
 Hull, T. G., Chicago.
 Hutton, J. II., Chicago.
 Hunter, A. H., Staunton.
 Irons, E. E., Chicago.
 Jacobson, C., Chicago.
 Jacobson, R. A., Chicago.
 Jaros, J. F., Chicago.
 Jenkinson, E. L., Chicago.
 Johnson, L. M., Arrowsmith.
 Jones, B. L., Dwight.
 Jones, F. B., Mattoon.
 Jordan, E. P., Chicago.
 Kaplan, M. A., Chicago.
 Kaplan, S., Chicago.
 Kappes, L. O., Evanston.
 Katz, L. N., Chicago.
 Kaufmann, G. L., Chicago.
 Keinigsberg, Aaron, Chicago.
 Kelley, C. II., Chicago.
 Kemp, R. S., Chicago.
 Kern, M., Chicago.
 Kiley, M. J., Chicago.
 Kittler, W. E., Rochelle.
 Klein, R. I., Chicago.
 Klug, O. C., East St. Louis.
 Knapp, H. C., East St. Louis.
 Knight, A. A., Chicago.
 Kobak, D., Chicago.
 Konzen, L. H., Wood River.
 Korman, Belle, Chicago.
 Kretschmer, H. L., Chicago.
 Landes, H. E., Chicago.
 Lange, H. L., Belleville.
 Larimore, G. W., Chicago.
 Lash, A. L., Chicago.
 Lebensohn, J. E., Chicago.
 Leech, P. N., Chicago.
 Leland, R. G., Chicago.
 Lewin, P., Chicago.
 Lewison, M., Chicago.
 Liberman, H. A., Moline.
 Lieberman, A. A., Elgin.
 Lindquist, J. L., Chicago.
 Lindsay, J. R., Chicago.
 Lindstedt, N. A., Rockford.
 Lischer, R. F., Mascoutah.
 Lockwood, C. H., Chicago.
 Loosh, C. S., Chicago.
 Love, A. I., Chicago.
 Luckhardt, A. B., Chicago.
 Lundy, Clayton J., Chicago.
 Macdonald, C. N., Chicago.
 Maryan, H. O., Chicago.
 Mathis, J. A., Pinckneyville.
 Mayer, L. L., Chicago.
 McConnell, B. C., LeRoy.
 McIntosh, J. J., Mt. Carmel.
 McNattin, R. F., Chicago.
 McPheron, R. H., Chicago.
 Meany, T. E., Chicago.
 Menendian, R. V., Chicago.
 Melnick, P. J., Chicago.
 Meloy, E. S., Highland.
 Meriweather, T., Decatur.
 Merkle, M. E., Peoria.
 Meyer, G. E., Belleville.
 Miller, J. F., Chicago.
 Mills, R. G., Decatur.
 Miner, E. R., Macomb.
 Molden, C. E., Troy.
 Montgomery, E. B., Quincy.
 Moore, E. F., Collinsville.
 Moore, F. J., Chicago.
 Moore, J. W., Danville.
 Moore, J. J., Chicago.
 Mroz, R. J., Rockford.
 Mundt, G. H., Chicago.
 Murray, M. B., Maywood.
 Neal, J. R., Springfield.
 Neiman, B. II., Chicago.
 Nelson, P. A., Chicago.
 Newberger, C., Chicago.
 Nierenberg, P. S., Albion.
 Nystrom, E. E., Peoria.
 O'Donoghue, J. B., Chicago.
 O'Malley, J. M., Ohio.
 Orndoff, B. II., Chicago.
 Otis, F. J., Moline.
 Otis, M. II., Moline.
 Packard, R. K., Chicago.
 Palmer, H. D., Rockford.
 Pautler, E. A., Red Bud.
 Penning, H. L., Springfield.
 Perlstein, M. A., Chicago.
 Perlstein, Minnie O., Chicago.
 Peters, J., Oak Park.
 Peterson, C. M., Chicago.
 Pfeiffer, C. F. II., Quincy.
 Pflock, J. J., Chicago.
 Pilot, I., Chicago.
 Piper, R. W., White Hall.
 Pollak, M., Peoria.
 Poncher, Henry G., Chicago.
 Pond, D. B., Chicago.
 Porces, O., Chicago.
 Portis, S. A., Chicago.
 Post, J., Chicago.
 Prosterman, F., Chicago.
 Purnell, E. A., Granite City.
 Pusey, W. A., Chicago.
 Queen, F. B., Chicago.
 Ranbar, A. C., Chicago.
 Rector, F. L., Evanston.
 Redington, J. C., Galesburg.
 Reed, C. B., Chicago.
 Rhoads, P. S., Evanston.
 Richardson, M. L., Freeport.
 Richter, H. A., Evanston.
 Rider, D. L., Riverside.
 Riordan, H. C., Oak Park.
 Roberts, C., Chicago.
 Robins, L. S., Chicago.
 Rose, F. E.
 Rosenblate, A., Chicago.
 Ross, H. E., Danville.
 Scott, R. B., Chicago.
 Scott, T. C., Lexington.
 Scheman, L., Chicago.
 Scherer, A. G., Chicago.
 Schermer, J., Granite City.
 Schmidt, F. E., Chicago.
 Schneidewind, O. G., New Athens.
 Schorr, H. C., Chicago.
 Sexton, G. A., Monticello.
 Seymour, G. E., Colfax.
 Shambaugh, P., Chicago.
 Shepard, H. B., Canton.
 Shinall, H. L., Gibson City.
 Shurtleff, R. S., Canton.
 Siegert, F. W., Pana.
 Siegling, J. A., Urbana.
 Simunich, W. A., Chicago.
 Skaggs, C. S., East St. Louis.
 Smith, D. D., Decatur.

- Smith, E. M., Jr., Chicago.
 Smith, G. B., Alton.
 Smith, W. W., Gurnee.
 Snow, L. H., Evanston.
 Snyder, F. F., Chicago.
 Sokolofski, Mary, Chicago.
 Sondag, R. F., East St. Louis.
 Soper, G. R., Evanston.
 Spirek, M. L., Chicago.
 Steigmann, F., Chicago.
 Stines, T. I., East St. Louis.
 Stoll, J. E., Chicago.
 Sykes, R. H., Evanston.
 Taylor, R. E., Chicago.
 Taylor, S. G., Chicago.
 Thompson, L. M., Lena.
 Toomey, T. N., Springfield.
 Traum, A. H., Chicago.
 Trippel, E., O'Fallon.
 Tsoung, G. D., Chicago.
 Unger, I., Chicago.
 Van Dellen, T. R., Chicago.
 Van Hoosen, B., Chicago.
 Van Verst, P. H., Oak Park.
 Veirs, Willard L., Urbana.
 Voigt, C. B., Mattoon.
 Volini, Italo F., Chicago.
 Voris, H. M., East St. Louis.
 Voris, H. C., Chicago.
 Walbright, G. W., Danville.
 Walters, A. E., Springfield.
 Walker, H. O., Huntville.
 Walker, H. W., Pekin.
 Walker, S. R., Chebanse.
 Walsh, T. E., Chicago.
 Walton, J. E., Alton.
 Ward, C. F., Pontiac.
 Ward, James A., Golconda.
 Waud, S. P., Chicago.
 Wead, J. T., Wyoming.
 Wenger, O. C., Chicago.
 West, O., Chicago.
 Wester, E. A., Mount Sterling.
 Wessel, P. H., Moline.
 Whalen, C. J., Chicago.
 Wilhelms, W., East St. Louis.
 Wilkinson, C. E., Danville.
 Williams, W. W., Quincy.
 Williamson, M. R., Alton.
 Wilson, E., Troy.
 Winnet, M. H., Chicago.
 Wood, W. L., Chicago.
 Woodward, W. C., Chicago.
 Wright, F., Chicago.
 Wright, G. E., Woodstock.
 Young, S., Chicago.
 Ziegler, J. H., Farmer City.
 Zapffe, F. C., Chicago.
 Zeisler, Erwin P., Chicago.
- (Registered Wednesday):
 Aaberg, E. L., Peoria Hts.
 Ahroon, C. R., Jr., Bloomington.
 Airts, B. H., Lincoln.
 Allen, E. S., Jr., Arcola.
 Allen, T. D., Chicago.
 Anderson, F. M., Decatur.
 Anspaugh, F. E., Virden.
 Armitage, R. B., Lawrenceville.
 Armstrong, G. L., Taylorville.
 Auld, D. V., Havana.
 Bacon, J. H., Peoria.
 Baier, A., East Alton.
 Baker, L. L., Wood River.
 Banks, S. W., Chicago.
 Barbour, O., Peoria.
 Barton, E. M., Chicago.
 Bassoe, P., Chicago.
 Baumann, C. H., Belleville.
 Becker, C. F., Lincoln.
 Becker, S. W., Chicago.
 Bedinger, P. L., Evanston.
 Bellas, J. E., Peoria.
 Binney, R. W., Granite City.
 Birchwood, E., Chicago.
 Black, E., Jacksonville.
 Blaine, W. C., Tuscola.
 Bley, R. E., Jr., Bunker Hill.
 Blech, Gustavus M., Chicago.
 Bollaert, F. E., East Moline.
 Bond, R. G., Harrisburg.
 Bondurant, F., Cairo.
 Borin, G. M., Peoria.
 Bornstein, F. P., Rochester.
 Boyd, R. B., Casey.
 Boylson, M., Tuscola.
 Branch, C. D., Peoria.
 Breck, M. R., Chicago.
 Brennan, J. L., E. St. Louis.
 Broadwell, S., Jr., Springfield.
 Buley, H. M., Champaign.
 Bumstead, C. M., Monticello.
 Buswell, C. A., Chicago.
 Canaday, R. N., Dupo.
 Carey, C. K., Rushville.
 Chamness, G. C., Sheridan.
 Crean, C. L., Chicago.
 Chivers, J. H., Chicago.
 Coffey, L. M., Peoria.
 Goldstein, I. I., Dixon.
 Cole, H. H., Springfield.
 Cole, Lucius, Oak Park.
 Coleman, E. P., Canton.
 Coleman, W. W., Lincoln.
 Connelly, G. S., Mt. Pulaski.
 Cornbleet, Theodore, Chicago.
 Cox, C. A., Morton.
 Cox, H. S., Danville.
 Cratty, Wm. J., E. St. Louis.
 Crawford, W. L., Rockford.
 Crown, Edward, Chicago.
 Culbertson, O. J., E. St. Louis.
 Cushman, Beulah, Chicago.
 Dale, P. M., Granite City.
 Lehman, D. A., Harrisburg.
 Darling, U. G., Chicago.
 Dashiell, G. F., Chicago.
 Davis, M. E., Chicago.
 Delaney, P. A., Chicago.
 DeLee, J. B., Chicago.
 Deneen, Frank, Bloomington.
 Dewhirst, E. M., Danville.
 Dexheimer, H. P., O'Fallon.
 Dicus, Geo. A., Streator.
 Dieckmann, Wm. J., Chicago.
 Dierker, J. B., Nauvoo.
 Dixon, C. M., Mt. Vernon.
 Dorne, Maurice, Chicago.
 Driskell, C. R., Raymond.
 Droege, Edw. H., Granite City.
 Duane, J. F., Peoria.
 Duncan, W. P., Jacksonville.
 Earle, W. C., Champaign.
 Edison, A. I., Chicago.
 Eisele, C. E., East St. Louis.
 Eldridge, C. H., W. Frankfort.
 Ellis, J. J., West Frankfort.
 Ellis, R. B., East St. Louis.
 Elworthy, R., Elmhurst.
 Emons, C. W., Alton.
 Engelbach, F., Jacksonville.
 Engh, H. A., Gillespie.
 English, Harlan, Danville.
 Ennis, A. L., Maroa.
 Entin, Samson D., Chicago.
 Erlanson, L. J., Wilmington.
 Esau, J. N., Chicago.
 Esposito, A. R., Murphysboro.
 Etheredge, Maude L., Urbana.
 Ferguson, E. C., Edwardsville.
 Ferguson, R. R., Chicago.
 Finnerud, C. W., Chicago.
 Finney, H. A., Girard.
 Fischer, Clarence, Peoria.
 Fowler, F. H., Chicago.
 Fowler, L. L., Mar'ou.
 Frank, W. L., Jacksonville.
 French, R. L., Oak Park.
 Friedberg, S. A., Chicago.
 Friedman, David, Madison.
 Frymire, W. A., Monmouth.
 Funkhouser, T. W., Danville.
 Furey, W. W., Chicago.
 Gailey, W. W., Bloomington.
 Geiger, A. H., Chicago.
 Gernon, G. D., Champaign.
 Gilbert, N. C., Chicago.
 Glatzer, Zoltan, Dixon.
 Goff, S. B., Charleston.
 Goldt, H. B., Chicago.
 Graham, James, Springfield.
 Graham, R. M., Chicago.
 Gray, W. A., Metropolis.
 Greeley, P. W., Chicago.
 Green, W. I., Lawrenceville.
 Griswold, R. W., Litchfield.
 Gunderson, N. O., Rockford.
 Hagans, F. M., Lincoln.
 Hall, Andy, Mt. Vernon.
 Hall, G. W., Chicago.
 Hall, Wm. L., Greenville.
 Halley, E. P., Decatur.
 Hambrecht, Fred, Galesburg.
 Hamilton, C. N., Rockford.
 Hamilton, C. O., Mt. Vernon.
 Harrison, C. F., Springfield.
 Harris, R. A., Quincy.
 Hastings, J. B., Alton.
 Havens, A., New Philadelphia.
 Helm, J. Wesley, Gridley.
 Hiller, F. B., Pinckneyville.
 Helming, O. C., Waterloo.
 Henderson, J. F., Oakland.
 Hermann, J. B., Belleville.
 Herndon, R. F., Springfield.
 Hill, C. E., East St. Louis.
 Holinger, P. H., Chicago.
 Holten, E. H., East St. Louis.
 Holoffe, C. P., W. Frankfort.
 Hopkins, J. H., Walnut.
 Houston, S. D., Polo.
 Hubbard, S. M., Ridgefarm.
 Hudson, Zach, Marion.
 Hulick, C. H., Shelbyville.
 Humphrey, H. I., Homer.
 Hurd, H. H., East St. Louis.
 Irwin, G. E., Kankakee.
 Iseman, L. L., Chicago.
 Ivy, A. C., Chicago.
 Jacobs, H. M., Sterling.
 Jamison, Dan D., Wheaton.
 Jenkins, J. T., Peoria.
 Johnson, L. H., Casey.
 Johnson, William, Galesburg.
 Jones, C. C., Bloomington.
 Jones, R. R., Winchester.
 Jordan, E. P., Chicago.
 Kampen, H. L., Monmouth.
 Kempff, J. W., Highland.
 Kirk, J. W., Oblong.
 Kirkwood, Tom, Lawrenceville.
 Kiser, C. R., Madison.
 Klein, G. C., Galesburg.
 Knewitz, R. W., E. St. Louis.
 Knight, A. A., Chicago.
 Kraft, R. E., Collinsville.
 Krigsten, W. N., Chicago.
 Kronenberg, M. H., Chicago.
 Lake, G. B., Waukegan.
 Lane, C. O., W. Frankfort.
 Lang, Theodor, Rockford.
 Lannan, E. I., Belleville.
 Larrain, A. R., Chicago.
 Latz, L. J., Chicago.
 Lebowitz, J. J., Chicago.
 Leonard, C. F., East St. Louis.
 Leschin, Sophie, Jacksonville.
 Levine, H. J., Centralia.
 Levinson, Abraham, Chicago.
 Levinson, S. O., Chicago.
 Levy, A. J., Chicago.
 Lindberg, H. A., Chicago.
 Lipman, W. H., Chicago.
 Lockhart, E. S., Nokomis.
 Love, L. L., Christopher.
 Lundgren, A. T., Chicago.
 Lusk, W. W., Carlinville.
 Magill, S. R., Springfield.
 Mann, W. A., Chicago.
 Marvel, W. R., Weldon.
 Maxwell, C. L., Belleville.
 May, E. Ralph, Chester.
 McBride, L. F., Chicago.
 McCann, O. M., E. St. Louis.
 McCaughey, R. S., Danville.
 McColl, Nettie Iona, Alton.
 McEnergy, E. T., Chicago.
 McGinnis, Wm. S., Alton.
 McKee, J. F., Johnson City.
 McKinney, G. L., Wood River.
 McQuillan, A. B., E. St. Louis.
 Meyer, Hershel, Chicago.
 Miller, A. F., Mason City.
 Miller, H. P., Rock Island.
 Millet, R. F., Macomb.
 Mindrup, R. G., Jerseyville.
 Mirikitani, Isami, Springfield.
 Mock, H. E., Chicago.
 Moderts, A. W., W. Frankfort.
 Monroe, D. D., Alton.
 Montgomery, B. E., Harrisburg.
 Montgomery, E. M., Cowden.
 Morginson, W. J., Springfield.
 Mueller, B. I., LaHarpe.
 Mueller, E. W., Chicago.
 Munson, S. E., Springfield.
 Murphy, F. G., Chicago.
 Neall, Mary P., Quincy.
 Nebel, H. J., E. St. Louis.
 Neber, E. N., Centralia.
 Needels, L. J., LeRoy.
 Nelson, Tell, Evanston.
 Nethercut, G. W., Chicago.
 Newcomb, W. H., Jacksonville.
 Newmark, I. D., Chester.
 Nicoll, H. K., Chicago.
 Nix, M. A., Princeton.
 Norris, R. M., Jacksonville.
 Obermeyer, A. E., Jacksonville.
 O'Connor, V. J., Chicago.
 Oliver, E. A., Chicago.
 Olson, E. L., Chanute Field.
 Ormsby, O. B., Murphysboro.
 Otrich, G. C., Belleville.
 Otten, Harry, Springfield.
 Pace, E. R., Evanston.

Pernworth, P. H., Venice.
 Peterson, J. A., Urbana.
 Peters, F. E., Winnetka.
 Peterson, C. A., Moline.
 Pfeifferberger, Mather, Alton.
 Phillips, J. H., Granite City.
 Phillips, W. E., Cisne.
 Pohl, C. M., Chicago.
 Porter, A. S., Salem.
 Potter, C. C., Alton.
 Powell, J. R., Champaign.
 Purcell, A. C., Streator.
 Purves, S. A., Des Plaines.
 Quinn, E. R., East Alton.
 Quinn, H. E., Chicago.
 Raach, J. H., Wheaton.
 Raber, D. D., Bloomington.
 Ragins, O. B., Chicago.
 Rattner, Herbert, Chicago.
 Reid, P. E., Sparta.
 Rezek, G. H., Chicago.
 Rimmerman, A. B., Chicago.
 Roane, J. Q., Carlisle.
 Robertson, O. H., Chicago.
 Rockey, L. F., Freeport.
 Rockey, V. V., Winslow.
 Rosenblum, Philip, Chicago.
 Rosson, J. R., Tamm.
 Rubin, S. S., Chicago.
 Rudolph, Louis, Chicago.
 Ryan, L. A., East St. Louis.
 Ryder, B. I., Henry.
 Rypins, E. L., Bloomington.
 Sadlek, L. A., Chicago.
 Sale, L. O., Fisher.
 Salliday, M. H., Taylorville.
 Scheve, E. F., Mascoutah.
 Schiller, M. A., Chicago.
 Schuette, Wm. H., Mason City.
 Scopelite, J. A., Madison.
 Scrivner, W. C., E. St. Louis.
 Seaton, R. M., Morrisville.
 Sedgwick, H. M., Peoria.
 Senear, F. E., Chicago.
 Serby, A. M., Chicago.
 Shambaugh, Philip, Chicago.
 Shapiro, I. J., Chicago.
 Sharp, J. R., Girard.
 Shore, John, Sailor Springs.
 Sibilsky, C. E., Peoria.
 Sihler, G. A., Litchfield.
 Singer, J. J., Chicago.
 Sistler, A. O., Hoopeston.
 Sittler, W. W., Chicago.
 Small, L. C., Mattoon.
 Smarzo, Marjorie M., Urbana.
 Smazel, M., Chicago.
 Smith, S. G., Decatur.
 Smith, E. M., Elmhurst.
 Smith, Wm. L., Monroe.
 Sparling, A. M., Sailor Springs.
 Spiesman, M. G., Chicago.
 Spitze, E. C., East St. Louis.
 Stack, J. K., Chicago.
 Stanley, O. O., Decatur.
 Stickler, G. B., Springfield.
 Stewart, Lena M., Joliet.
 Stickley, W. T., White Hall.
 Stoll, C. G., Sumner.
 Sugar, S. A., Chicago.
 Sutherland, J. C., Sparta.
 Swanberg, Harold, Quincy.
 Swantz, H. E., Oak Park.
 Tappan, E. A., Paxton.
 Tarnawski, Alexander, Dixon.
 Tate, E. N., Galesburg.
 Tatge, E. G., Evanston.

Theobald, G. D., Oak Park.
 Thomson, William, Cypress.
 Tietze, H. C., Edwardsville.
 Tobin, J. R., Elgin.
 Tracer, I. R., Chicago.
 DeTrazio, J. A., Ava.
 Trigger, H. W., Ellsworth.
 Trotter, J. D., Carthage.
 Trumpe, D. H., Springfield.
 Turner, C. S., Peoria.
 Turney, H. C., Shelbyville.
 Twitchell, B. E., Belleville.
 Vaughn, A. M., Chicago.
 Vehe, K. L., Chicago.
 Vernon, G. H., Springfield.
 Wagner, H. C., Highland Park.
 Waldo, P. C., Oak Park.
 Walton, W. H., Belleville.
 Wand, Sydney, Chicago.
 Waner, W. L., Evanston.
 Ward, B. F., Cicero.
 Ward, Mildred D., Cicero.
 Warren, H. B., Breese.
 Weiner, H. I., Dixon.
 Wells, R. P., Pleasant Hill.
 Wescott, Vigil, Chicago.
 White, M. E., Kankakee.
 White, C. J., Chicago.
 Wilkinson, G. E., Alton.
 Williams, Fleta, Oak Park.
 Williams, T. J., Chicago.
 Williamson, Holland, Danville.
 Wineberg, I. H., Quincy.
 Wood, C. M., Decatur.
 Wood, W. C., Decatur.
 Wood, W. L., Chicago.
 Woodyatt, R. T., Chicago.
 Wright, N. A., Sr., Manito.
 Xelowski, T. Z., Chicago.
 Zakon, S. J., Chicago.
 Zeman, E. D., Belleville.
 Zimmerman, L. M., Chicago.
 Zoller, C. H., Litchfield.

Registered Thursday

Adair, F. L., Chicago.
 Adams, A. L., Jacksonville.
 Alderson, C. F., E. St. Louis.
 Allen, G. I., Peoria.
 Allison, Chas., Kankakee.
 Alvis, W. H., Benton.
 Anderson, L. H., Aurora.
 Arens, Robt. A., Chicago.
 Arkin, M. L., Chicago.
 Armstrong, W. P., Jr., Springfield.
 Arnold, Lloyd, Chicago.
 Athey, G. L., Beardstown.
 Bailey, Percival, Chicago.
 Baldwin, A. K., Carrollton.
 Baldwin, H. E., Danville.
 Barber, H. C., Normal.
 Barnett, I. F., Chicago.
 Bartelt, Wm. F., Chicago.
 Barth, E. E., Chicago.
 Barwasser, N. C., Moline.
 Bateman, M. A., Carlyle.
 Beard, J. H., Urbana.
 Beare, J. W., Chester.
 Beattie, J. G., Evansville.
 Beecher, M. C., Knoxville.
 Beinak, P. J., Chicago.
 Belsley, J. P., Peoria.
 Belting, J. T., Charleston.
 Berda, Barbara F., Berwyn.
 Berghoff, R. S., Chicago.
 Berkheiser, E. J., Chicago.

Bishkow, I. E., Chicago.
 Biston, Martin, Charleston.
 Bitter, A. H., Quincy.
 Black, R. A., Chicago.
 Blair, E. T., Springfield.
 Blender, Wm., Peoria.
 Blickenstaff, A. J., Peoria.
 Bloomfield, Mat, Joliet.
 Blunk, S. M., Virden.
 Bohannon, H. R., Jerseyville.
 Boone, H. B., Chanderville.
 Bosworth, R., East St. Louis.
 Brenner, F. T., Quincy.
 Bryan, J. L., Xenia.
 Brewster, B. M., Jerseyville.
 Brouse, I. E., Jacksonville.
 Brown, L. S., Hillsboro.
 Browne, R. W., Dwight.
 Burgess, C. O., Monmouth.
 Bucher, C. S., Champaign.
 Bucy, P. C., Chicago.
 Bushnell, L. F., Highland Park.
 Butler, C. D., Oak Park.
 Cameron, S. A., Rantoul.
 Campbell, J. P., Wheaton.
 Campbell, R. S., Springfield.
 Canatsey, E. D., Jacksonville.
 Carlstrom, F. J., Rockford.
 Caro, M. R., Chicago.
 Carter, J. B., Chicago.
 Cartmell, H. D., Greenville.
 Case, T. J., Chicago.
 Cass, J. L., Kankakee.
 Channess, E. R., Carlinville.
 Chesnut, N. H., Springfield.
 Charles, T., Beardstown.
 Chilcott, I. H., Chicago.
 Christenson, J. A., Chicago.
 Claridge, J. D., Chicago.
 Clayton, J. W., Johnston City.
 Cline, G. M., Bloomington.
 Cochran, J. R., Jr., Chicago.
 Cohen, A. E., Peoria.
 Cook, C. E., Chicago.
 Cooper, W. H., Ivesdale.
 Cosand, M. E., Dongola.
 Cowdin, F. P., Springfield.
 Crandle, E. R., Carbondale.
 Crass, E. W., Chicago.
 Crowder, E. R., Evanston.
 Curry, A. B., Decatur.
 Curtis, A. H., Chicago.
 Cutler, Max, Chicago.
 Dailey, U. G., Chicago.
 Dale, A. E., Danville.
 Davidson, W. P., Decatur.
 Davis, H. L., Rockford.
 Davis, Loyal, Chicago.
 Davis, Wm. E., Quincy.
 Dean, R. K., Peoria.
 DeBere, C. J., Chicago.
 Delicate, W. E., Edwardsville.
 Dillon, C. C., Sidell.
 Dillman, H. B., Flora.
 Dilts, P. V., Pittsfield.
 Dorsey, H. D., Oak Park.
 Doud, R. W., Normal.
 Draa, C. C., Chicago.
 Dragstedt, L. R., Chicago.
 Drummy, A. M., Lincoln.
 DuComb, W. L., Carlyle.
 Duncan, P. E., Taylorville.
 Dunn, J. W., Cairo.
 Durkin, H. A., Peoria.
 Dyas, F. G., LaGrange.
 Eastman, H. C., Galesburg.
 Easton, M. T., Peoria.

Eberhart, C. M., Highland.
 Eberspacher, F. J., Peoria.
 Ehlert, C. D., Alton.
 Ehrhardt, O. E., Springfield.
 Elkins, H. A., Mt. Carmel.
 Ellis, C. C., Moline.
 Everhart, A. M., Sheldon.
 Feinberg, S. M., Chicago.
 Fell, E. H., Chicago.
 Felts, W. T., Carbondale.
 Fenn, G. K., Chicago.
 Fey, D. W., Peoria.
 Fink, O. E., Danville.
 Fisher, J. G., Danville.
 Fischer, J. W., Chicago.
 Fitzpatrick, M. W., Decatur.
 Fletcher, A. J., Vermilion.
 Flora, W. W., Chicago.
 Foley, C. J., Waukegan.
 Forbrich, J. A., Chicago.
 Ford, W. K., Rockford.
 Fox, Ben, Carbondale.
 Fox, W. W., Lincoln.
 Franklin, C. E., Oak Park.
 Frederickson, F. O., Chicago.
 Freeman, D. B., Moline.
 Freilich, E. B., Chicago.
 de Freitas, J. A., Springfield.
 Fringer, R. C., Rockford.
 Fringer, W. R., Rockford.
 Fisher, H. N., Olney.
 Fruin, L. T., Normal.
 Fullerton, W. W., Steeleville.
 Gamble, R. C., Chicago.
 Gardiner, W. R., Herrin.
 Garrison, Wm. H., White Hall.
 Garvin, T. M., Chicago.
 Gates, F. H., Decatur.
 Gatewood, L. C., Chicago.
 Geerlings, L. J., Shelbyville.
 Giberson, Oria O., Alton.
 Gibson, A. T., Morrisville.
 Gifford, S. R., Chicago.
 Glasford, S. T., Pekin.
 Gledhill, H. R., Jerseyville.
 Goff, A. C., Staunton.
 Goldberg, B. F., Chicago.
 Goldenberg, M. M., East St. Louis.
 Goldenburg, Michael, Chicago.
 Goodman, J. E., Pleasant Hill.
 Goodrich, W. R., Bluford.
 Goodwin, P. B., Peoria.
 Gordon, H. S., Coal City.
 Gordon, R. E., El Paso.
 Governale, S. L., Chicago.
 Grabam, J. A., Chicago.
 Graff, R. J., Dixon.
 Graham, J. K., Avon.
 Grant, J. J., Freeport.
 Gray, Earle, Chicago.
 Greer, Mark, Vandalia.
 Greider, F. C., Decatur.
 Grissom, R. F., Oak Park.
 Grondone, J. J., Gillespie.
 Grulice, C. G., Evanston.
 Gunnar, H. P., Chicago.
 Haas, F. F., Peoria.
 Hamilton, G. R., Lincoln.
 Hamm, L. N., Lincoln.
 Hammond, J. F., Chicago.
 Hanson, W. L., E. St. Louis.
 Hardt, L. L., Chicago.
 Harmon, C. F., Springfield.
 Harmon, P. H., Chicago.
 Harmon, T. F., Springfield.
 Hartley, P. B., Jacksonville.

- Hawkinson, Oscar, Chicago.
 Hayden, D. B., Chicago.
 Hayes, J. M., Decatur.
 Hayes, R. H., Chicago.
 Hedges, R. N., Chicago.
 Heiligenstein, R. C., Belleville.
 Henkel, H. B., Springfield.
 Hennig, E. L., Herrin.
 Henry, S., Effingham.
 Hepner, P. E., Danville.
 Herbst, R. H., Chicago.
 Hermetet, J. H., Macomb.
 Herrick, J. B., Chicago.
 Herrmann, N. A., Harrisburg.
 Hervey, Wm. E., E. St. Louis.
 Hesselstine, H. C., Chicago.
 Highsmith, C. O., W. Union.
 Highsmith, I. B., Flat Rock.
 Hoepfner, W. F., Chicago.
 Hoffman, L. G., Chicago.
 Hollander, W. D., Springfield.
 Holman, C. C., Effingham.
 Holmberg, Clara, Springfield.
 Horick, Edw., Elmhurst.
 Hornan, E. J., Bloomington.
 Horowitz, Bernard, Chicago.
 Hoyt, L. T., Roseville.
 Hussey, F. L., Chicago.
 Hutton, C. J., Atlanta.
 Hutton, T. L., Harrisburg.
 Ikemire, J. A., Palestine.
 Ikemire, Marjorie, Palestine.
 Ikayan, N. C., Charleston.
 Illyes, L. R., Palestine.
 Irish, H. E., Chicago.
 Isaacs, H. J., Chicago.
 Jacobson, M. A., Chicago.
 James, M. W., Bensenville.
 Jansey, F., Chicago.
 Johnson, F., Eldorado.
 Johnson, J. S., Cairo.
 Jones, F. W., Alton.
 Jones, M. E., Evanston.
 Jones, R. M., Chicago.
 Joseph, R. J., Belleville.
 Kaeser, A. F., Highland.
 Kane, R. L., Herrin.
 Keeton, R. W., Chicago.
 Keiser, F., Murphysboro.
 Keith, R., Anna.
 Kelikian, H., Chicago.
 Ketterer, F. H., Breese.
 Kinne, H. W., Wheaton.
 Kissel, J. P., Centralia.
 Knowles, H. B., Peoria.
 Koch, J. A., Quincy.
 Koerner, C. S. M., Peoria.
 Kotalik, F. J., Berwyn.
 Koucky, J. D., Chicago.
 Lamb, J. G., Cerro Gordo.
 Langstaff, J. H., Fairbury.
 Law, S. G., Naperville.
 Lawlah, J. W., Chicago.
 Lawler, T. A., Taylorville.
 Lawson, L. J., Evanston.
 Lawton, S. E., Chicago.
 LeRoy, G. V., Chicago.
 Leschin, S. N., Jacksonville.
 Levin, I. M., Chicago.
 Lewis, D. J., Springfield.
 Liebman, S., Alton.
 Limarzi, L. R., Chicago.
 Littlejohn, D. M., Pana.
 Logan, H. L., Salem.
 Long, U. M., Decatur.
 Mackay, R. P., Chicago.
 Magarian, L., East St. Louis.
 Maple, F. F., Chicago.
 Marley, L. M., Chicago.
 Martin, C. L., Chicago.
 Martin, F. R., Decatur.
 Marxer, B., Dupu.
 Masters, T. D., Springfield.
 Matthies, R. A., Hinsdale.
 Maupin, H., Quincy.
 May, S. R., Mt. Zion.
 Mazel, M. S., Chicago.
 McCarthy, D. H., Springfield.
 McCuiston, H. P., Alton.
 McCorvie, J. E., Peoria.
 McCuskey, J. M., Peoria.
 McGrath, P. R., Peoria.
 McIntosh, J. R., Bloomington.
 McKinney, R. N., Winnetka.
 Mercer, R., Quincy.
 Mercer, W. H., Taylorville.
 Merriman, J. R., Evanston.
 Mershon, G. E., Mt. Carroll.
 Nurtz, A. A., Decatur.
 Merwin, E. G., Highland.
 Metz, A. R., Chicago.
 Michael, O. J., Danville.
 Miller, A. R., Alton.
 Miller, A. M., Danville.
 Miller, J. E., Quincy.
 Milles, G., Chicago.
 Miller, J. R., Chicago.
 Mills, J. H., Chicago.
 Milligan, J. D., Elgin.
 Mittleman, H. A., East Alton.
 Moore, B., Danville.
 Mora, J. M., Chicago.
 Moter, R. L., Albion.
 Moore, G. G., Benton.
 Munson, F. W., Streator.
 Murphy, D., Dixon.
 Murphy, T. J., Decatur.
 Musgrave, G. J., Chicago.
 Myers, W. H., Coal Valley.
 Marbel, M. M., Chicago.
 Nadelhoffer, L. E., Chicago.
 Nagel, F. E., Chicago.
 Neece, I. H., Decatur.
 Newman, M. L., Jacksonville.
 Nobles, C. D., Anna.
 Norbury, F. G., Jacksonville.
 Nowlin, W. J., Farmer City.
 Oden, R., Chicago.
 O'Hara, F. S., Springfield.
 Murfin, W. D., Decatur.
 Ortmayer, M., Chicago.
 Orcutt, D. C., Chicago.
 Paisley, A. M., Jacksonville.
 Palmer, W. L., Chicago.
 Parker, W. G., Mt. Vernon.
 Pearce, W. F., Quincy.
 Pearman, A., Rockford.
 Pearson, E. F., Springfield.
 Penchina, M., Chicago.
 Perkins, W. C., Chicago.
 Pernokis, E. W., Chicago.
 Peters, A. J., Greenup.
 Peterson, H. M., Chicago.
 Pontius, G. V., Chicago.
 Pope, M. H., Evanston.
 Porter, G. L., Urbana.
 Potts, A. L., Gibson City.
 Potts, W. J., Oak Park.
 Price, R. G., Bloomington.
 Rapuzzi, J. E., Abingdon.
 Rasmussen, A., Chicago.
 Rebillot, J. R., Litchfield.
 Reisch, J. E., Springfield.
 Remington, S., Chicago.
 Renner, F. A., Lebanon.
 Revard, G. J., Jr., Decatur.
 Rich, Ciney, Decatur.
 Rife, B. V., Anna.
 River, L. P., Oak Park.
 Roberson, B. L., Wood River.
 Roberson, W. V., Wood River.
 Roberts, D. M., Alton.
 Robinson, S. C., Chicago.
 Rockefeller, L. D., Wood River.
 Rogier, H. O., Mason City.
 Rogers, S. P., Chicago.
 Rolnick, H. C., Chicago.
 Rosenberg, D. H., Chicago.
 Rosenblum, S. H., Chicago.
 Rosenthal, S. D., Chicago.
 Ross, G. W., Watseka.
 Ross, J. F., Golden.
 Rossman, E. J., Aurora.
 Rukstinat, G. J., Chicago.
 Rusk, J. A., Fremont.
 Ryan, H. E., Centralia.
 Ryan, L. D., Chicago.
 Sabath, D. J., Chicago.
 Sanders, C. J., Ashley.
 Sanders, O. M., Centralia.
 Sanders, R. Z., Decatur.
 Sanford, H. N., Chicago.
 Savitt, L., Chicago.
 Sawyer, C. F., Chicago.
 Schlapiak, D. D., Chicago.
 Schultz, F. W., Chicago.
 Schowengerdt, W. E., Champaign.
 Schmidtke, J. C., Elgin.
 Schumacher, H. W.
 Seed, L., Chicago.
 Sered, H., Chicago.
 Shallenberger, P. L., Chicago.
 Shambaugh, G. E., Jr., Chicago.
 Shannon, C. E., Chicago.
 Shapiro, F., Chicago.
 Shaw, N. G., Evanston.
 Sherrick, J. L., Monmouth.
 Siegert, R. B., Pana.
 Simonds, J. P., Chicago.
 Singer, J. J., Chicago.
 Sirls, W. P., Herrin.
 Skeele, W. A., Hardin.
 Sloan, H. P., Bloomington.
 Smith, C. R., Decatur.
 Smith, H. J., Chicago.
 Sneller, C. D., Peoria.
 Snider, R. F., St. Francisville.
 Snider, W. T., Oakwood.
 Snorf, L. D., Evanston.
 Sodaro, J. C., Forest Park.
 Solem, G. O., Chicago.
 Soucy, J. C., East St. Louis.
 Staben, G. W., Springfield.
 Stahmann, F. S., Peoria.
 Stanford, V. B., Illiopolis.
 Starkey, T. A., Beardstown.
 Staton, V. A., Springfield.
 Steer, A. E., Springfield.
 Steiner, J. C., Quincy.
 Stenhouse, E. E., Chicago.
 Stephan, C. T., Chicago.
 Straus, F. H., Chicago.
 Strauss, A. A., Chicago.
 Stuttle, F., Peoria.
 Sugar, S. H., Chicago.
 Sullivan, E. F., Gillespie.
 Sullivan, R. C., Chicago.
 Swickard, C. D., Charleston.
 Taylor, H. O., Anna.
 Taylor, J. H., Villa Grove.
 Taylor, R. W., Villa Grove.
 Taylor, W. S., Ashland.
 Tearnan, R. A., Decatur.
 Telfer, G. A., Hillsboro.
 Telford, A. T., Quincy.
 Templeton, J. S., Pinckneyville.
 Thomas, E. W., Roodhouse.
 Thompson, W. O., Chicago.
 Thorek, M., Chicago.
 Tidwell, J. W., Herrin.
 Timmons, P. J., Woodhull.
 Tint, L. J., Chicago.
 Tonkens, S. W., Burlington.
 Tumpey, I. H., Chicago.
 Turner, E. C., Savanna.
 Tweedy, W. R., Royalton.
 Twichell, S. I., Belleville.
 Uthoff, C. J., Oak Park.
 VanAlyea, O. E., Chicago.
 VanAtta, C. L., Alton.
 Vander Kloot, A., Chicago.
 Vernon, E. L., Chicago.
 Vonachen, J. R., Peoria.
 Wakerlin, G. E., Chicago.
 Walker, W. D., Ashley.
 Wall, E. D., Peoria.
 Walsh, J. A., Peoria.
 Wallace, M., Chicago.
 Wallace, W. G., Mattoon.
 Ward, C. V., Peoria.
 Warden, M. R., Danville.
 Webb, B. H., West Frankfort.
 Webster, A., Chicago.
 Weir, J., West Union.
 Weir, L. J., Marshall.
 Welch, J. W., Cuba.
 Welford, N. T., LaGrange.
 Wellenreiter, O. F., Danville.
 Wellmerling, H. W., Bloomington.
 Wells, J. W., Waltonville.
 Wernicke, H. O., Chicago.
 Weston, C. L., Macomb.
 Whalen, C. P., Hume.
 Wheeler, J. E., Belleville.
 Wiley, E. J., Elizabeth.
 Wilhelm, L. J., Joliet.
 Wilkinson, S. J., Decatur.
 Williams, C. H., West Frankfort.
 Williams, O. B., Chicago.
 Willy, R. G., Chicago.
 Wilson, E. G., Kankakee.
 Winters, W. L., Highland Park.
 Wolfe, A. G., Jacksonville.
 Wolfe, H. M., Taylorville.
 Wilhoit, D. S., Martinville.
 Wittenberg, C. E., Danvers.
 Woodruff, L. W., Joliet.
 Yaeger, H. A., Litchfield.
 Young, L. W., Fairfield.
 Young, W. R., Geneseo.
 Youngberg, P. P., Moline.
 Zeller, M., Chicago.
 Zerboglio, D. J., Benld.
 (Registered Friday):
 Alt, H. L., Chicago.
 Ambrose, S. H., Lexington.
 Amtman, L., Chicago.
 Aptelbach, G. L., Chicago.
 Aszmann, A. M., E. St. Louis.
 Barker, M. H., Chicago.
 Barrow, J. N., Carbondale.

- Barry, F. W., Coffeen.
 Berg, M., Chicago.
 Beykirch, J., East St. Louis.
 Billings, W. W., Alton.
 Blackard, W. J., Jr., Harrisburg.
 Blair, C. P., Monmouth.
 Bloch, L., Chicago.
 Blome, F. M., Kenney.
 Blakely, J. T., Fairfield.
 Bowers, D. E., Peoria.
 Bowman, H. S., Jacksonville.
 Bradburn, H. B., Lincoln.
 Bulger, C. O., Greenfield.
 Bullington, G. C., Pana.
 Campbell, R. I., E. St. Louis.
 Cannady, E. W., E. St. Louis.
 Carmichael, H. T., Chicago.
 Conner, J. A., Chicago.
 Cooper, E. F., Peoria.
 Corbus, B. C., Chicago.
 Cordonnier, J., E. St. Louis.
 Corrao, G., Chicago.
 Deal, D., Springfield.
 DeBourey, H. C., Silvis.
 Dickerman, H. S., Jr., Springfield.
 Dollear, A. H., Jacksonville.
 Dysart, B. R., Henry.
 Edwards, G. H., Pickneyville.
 Elliott, A. R., Chicago.
 Ellis, J. C., Rockton.
 Empson, R. G., Valmeyer.
 Evans, F. N., Springfield.
 Falls, F. H., Chicago.
 O'Farrell, P. F., Mount Olive.
 Fatheree, D. E., Xenia.
 Fehrenbacher, H. D., Flora.
 Feldman, H., Pekin.
 Felts, H. A., Marion.
 Finch, R. D., Flora.
 Firth, J. O., Monmouth.
 Fisher, S., Normal.
 Furby, S. B., Paxton.
 Gainer, J. F., Danville.
 Gardner, G. H., Chicago.
 Gibson, S., Chicago.
 Gilliatt, C. E., Allendale.
 Goodyear, A. F., Decatur.
 Goran, J. R., Erie.
 Graham, R., Monmouth.
 Green, R. L., Peoria.
 Greenwood, G. J., Evanston.
 Gulridge, G. H., DuQuoin.
 Hall, J. W., Jr., Chicago.
 Horsman, M. T., Salem.
 Heine, W. F., Rantoul.
 Henn, S. C., Chicago.
 Herrold, R. D., Chicago.
 Hess, J. H., Chicago.
 Hillemeyer, W. A., Chicago.
 Hobart, M. H., Evanston.
 Hoffman, J. O., Chester.
 Hoffman, S. J., Chicago.
 Holl, B. W., Springfield.
 Holland, W. W., Beardstown.
 Horn, C., Clifton.
 Howard, H. S., Peoria.
 Irish, H. E., Chicago.
 Jackman, A. I., Jacksonville.
 Jacobs, H. M., Chicago.
 Johnson, L. C., Tampico.
 Johnson, J. A., West Frankfort.
 Johnson, W. J., Decatur.
 Jones, A. J., Springfield.
 Kenward, R. L., Melvin.
 Kimball, Z. V., Hillsboro.
 Knewitz, O. W., E. St. Louis.
 Kohn, K. H., Chicago.
 Longeay, S. M., Belleville.
 Laing, G. H., Chicago.
 Lawler, E. G., Chicago.
 Lawler, P. E., Chicago.
 Lewis, J. S., Carbondale.
 Lockhart, C. H., Witt.
 Longwell, C. W., Nashville.
 Lulan, J. A., Chicago.
 MacEacher, M. I., Chicago.
 Maey, A. H., Columbia.
 Magill, A. O., Decatur.
 Mahle, A. E., Chicago.
 Marshall, G. R., Effingham.
 Mathre, A. I., Cambridge.
 May, L. J., Anna.
 Meyerson, S. B., Menard.
 McMillan, L. O., Xenia.
 McKaven, C. P., Pittsfield.
 Michael, W. A., Peoria.
 Millhon, H. B., Owaneco.
 Milligan, C. W., Springfield.
 Mitchell, J. H., Chicago.
 Morris, L. D., Mt. Carmel.
 Morgan, C. E., Mattoon.
 Myers, J. F., Virginia.
 Nickel, F. W., Eureka.
 Nolden, W. L., E. St. Louis.
 Norris, F. A., Jacksonville.
 O'Connell, P. B., Gillespie.
 Osterhagen, H. F., Mattoon.
 Perry, R. B., Lincoln.
 Petri, K. N., Peoria.
 Pollock, L. J., Chicago.
 Pollock, M. D., Decatur.
 Powers, J. G., Chicago.
 Quint, H. A., Evanston.
 Reinertsen, P. D., Canton.
 Richter, R. B., Chicago.
 Riffy, R. G., Robinson.
 Ritchie, C. F., Jacksonville.
 Roche, W. J., Peoria.
 Root, D. H., Mendon.
 Rouner, J. L., Quincy.
 Ryerson, E. W., Chicago.
 Sabine, R. S., Murphysboro.
 Scott, W. E., Lexington.
 Schacht, F. W., Evanston.
 Schmidt, H., Okawville.
 Schmitz, H. E., Chicago.
 Schultz, A. G., Jacksonville.
 Schwerer, H. M., Lewistown.
 Scott, A. C., Evansville.
 Senelick, S., Chicago.
 Shohet, A. S., Chicago.
 Siegfried, J. H., Lacon.
 Sihler, C. H., Litchfield.
 Sihler, G. A., Jr., Litchfield.
 Skinner, L., East St. Louis.
 Slight, D., Chicago.
 Sloan, LeRoy H., Chicago.
 Smialek, J. M., Chicago.
 Smith, A. W., Chicago.
 Smith, E. M., Mount Vernon.
 Smith, W. B., Danville.
 Snow, H. E., Centralia.
 Stafford, W. F., Mattoon.
 Stearns, A. L., Chicago.
 Stephenson, G. W., Bloomington.
 Stewart, B. L., Springfield.
 Stewart, D. B., Anna.
 Stone, F. L., Chicago.
 Strause, C. P., Peoria.
 Sulton, R. M., Peoria.
 Teasley, G. C., Jr., Robinson.
 Thomas, R. V., Manteno.
 Turner, L. L., Chicago.
 Vaneck, M., Chicago.
 Webster, G. O., Jacksonville.
 Weinstein, M. L., Chicago.
 Weir, E. W., Atwood.
 Wexler, E. J., Chicago.
 Whittaker, L. D., Peoria.
 Wiesman, I., Granite City.
 Wightman, G. S., Springfield.
 Willems, J. D., Chicago.
 Williams, V., Trivoli.
 Wisner, L. G., Herscher.
 Woodward, C. E., Decatur.
 Wright, L. D., Springfield.
 Young, L. C., Taylorville.
 Zurfli, C. V., Chicago.

TAX SUPPORTED MEDICINE

Many arguments pro and con have been offered both as to the workability and practicability of socialized medicine. Why pick on us as a profession? Why not have socialized groceries and clothing stores, socialized housing bureaus, and so on down the line? Certainly people need food, clothing and a place to sleep as much or more than they do medical care. And yet, with all the recent weeping and wailing about the third of the population that is poorly fed and clothed and ill-housed, no socialization of the means of securing to them these necessities of life has been suggested. Under the various relief plans, the professional men are the only ones of all the agencies cooperating, who are asked and required to take a cut in their pay for services rendered! I may be so bland as to remark that we, as doctors, have every bit as much time and money bound up in being qualified to do the things we do as any grocer or haberdasher. This seems to be the era of the "handout of something for nothing!" People have been told they should have every good thing handed to them, so often, and repeatedly, that they are actually beginning to believe it. Paternalism in government is preaching the psychology that the world owes its inhabitants a living. It smacks of the "horse and buggy days" for

our people to be self-sufficient and self-supporting. Such prime virtues as honesty and thrift are held up to public ridicule. It is too easy to lean on a paternalistic system for everything. Let it be noted that we professional men are not shirking our responsibilities. We are perfectly willing to cooperate with any relief scheme that allows us to maintain our independence from political domination. We are not apologizing for anything! We are, to be frank, rather proud of our record or achievement. But we defy anyone to take from us our heritage, by creating a politically controlled monopoly of our services to humanity.—Dr. Franklin W. Blye, Chicago. *Chicago Daily News*, August 16, 1938.

ANOTHER OF THE SAME TYPE

A negress was hailed into court for some misdemeanor and the Judge was questioning her.

"You say your husband has been dead ten years and you have six children?"

"Yassuh."

"How old are your children?"

"Well, one's twelve, one's eleven, one's nine, one's seven, an'—let me see—"

"But I thought you said your husband had been dead ten years."

"Yassuh, that's right. He's daid, jedge, but I ain't."

ILLINOIS STATE MEDICAL SOCIETY

PROCEEDINGS OF THE HOUSE OF DELEGATES

Rockford, May 2-4, 1939

The first session of the House of Delegates of the Illinois State Medical Society was held in the Armory, Rockford, Tuesday, May 2, 1939.

The meeting was called to order at 3:50 P.M. by the President, Dr. Samuel E. Munson, Springfield.

The President: I presume you are aware that this is the 99th session of the Illinois State Medical Society which we are now calling to order. It is a pleasure again to see you delegates. I wish to thank you for the courtesies throughout the year, and I hope our deliberations may be as harmonious as the affairs of this Society have been throughout the year. Last year I mentioned to you that I thought we had met at the crossroads of medicine for the large problems before us. The thing I do appreciate is the unanimity with which the medical profession has gone on this year.

The first order of business is the report of the Credentials Committee.

Dr. E. P. Coleman, Canton: The Credentials Committee has certified 59 downstate delegates, 49 Chicago Medical Society and 15 members of the Council, a total of 113. I move you, Mr. President, that these men constitute the House of Delegates for this meeting. (Motion seconded by Dr. W. E. Kittler, Rochelle, and carried.)

The President: The next order of business is the roll call by the Secretary.

The Secretary: With the consent of the House I move you that the attendance slips which constitute the 113 delegates reported by the Chairman of the Credentials Committee constitute the roll call for this meeting. (Motion seconded by Dr. N. S. Davis, III, Chicago, and carried.)

The President: The next order of business is the reading of the minutes of the 1938 meeting.

Dr. N. S. Davis, III, Chicago: I move that the minutes as published in the July, 1938, issue of the ILLINOIS MEDICAL JOURNAL be accepted as the official minutes. (Motion seconded by Dr. E. S. Hamilton, Kankakee, and carried.)

The President: The next order of business is the appointment of the Reference Committees:

Credentials Committee: Drs. E. P. Coleman,

Chairman; F. F. Maple, T. B. Williamson and E. C. Kelly.

Attendance Committee: Drs. W. S. Bougher, Chairman, and John W. Long.

Committee on Reports of Officers: Drs. G. Henry Mundt, Chairman; C. H. Hulick and Richard Greening.

Committee on Reports of Councilors: Drs. C. B. Ripley, Chairman; Oscar Hawkinson and L. O. Frech.

Committee on Reports of Standing Committees: Drs. Robert H. Hayes, Chairman; C. C. Guy and L. S. Reavley.

COMMITTEES ON REPORTS OF COUNCIL COMMITTEES

Committee "A": Drs. Mather Pfeiffenberger, Chairman; Tell Nelson and P. R. Blodgett.

Committee "B": Drs. Charles H. Phifer, Chairman; A. E. Walters and G. R. Ingraham.

Committee on Scientific Work, Social Security, and Report of the Editor: Drs. H. P. Saunders, Chairman; Hugh A. Beam and J. W. Stevens.

Resolutions Committee: Drs. N. S. Davis, III, Chairman; Frank P. Hammond and A. H. Bitter.

Committee on Miscellaneous Business: Drs. C. W. Carter, Chairman; G. E. Johnson and C. M. Fleming.

The President: The next order of business is the presentation of annual reports. These are published in the handbook, a copy of which each delegate has. These reports will not be read, but a supplementary report may be given.

Each report was called for in turn.

1939 ANNUAL REPORTS REPORT OF THE PRESIDENT

To the Members of The House of Delegates:

The past year in medical organization has been one of anxiety, thoughtful study and planning to meet the new difficulties that have come to the threshold of medicine for study and solution. Those of pressing significance and importance have found solution in the various committees of the Council and in the earnest effort of its officials and members.

More than usual effort has been made to encourage and sustain the progress and needs of scientific medicine. This is as it should be. The successful solution of our economic problems can only be accomplished by those instruments placed in our hands by organization and the continued progress of scientific medicine.

The conducted courses of the State Society, in conjunction with the State Department of Public Health, and what was called "refresher courses" in Maternal and Child Welfare, have terminated in what has been

considered a fairly beneficial and successful postgraduate instruction for the benefit of the downstate medical profession. This will require new study and coordination for a program next year, which will no longer be called refresher courses, but which the Educational Committee now calls "postgraduate courses" or "clinical conferences."

I had mentioned in some of my talks during the year that there might be a closer arrangement of the various activities of the Educational Committee and the State Department of Health, in a plan of arranging the presentation of what are now considered vital and necessary subjects, in weekly or bi-weekly programs at eight or ten important centers downstate, during the year. This met with wide approval of the men downstate, who are anxious for a more definite plan of study that will fill the need of our men who are unable to either spend the time or money to leave home and avail themselves of postgraduate study in medical centers. This is being carefully planned by a large per cent of the states and has been functioning in some of these states for the last few years.

During the past year it has been a pleasure to meet and discuss with the Doctors the problems of economic medicine in various sections of the state. I believe the medical men have become more minded as to the phases of socialized medicine and the importance of contact with both their congressmen and legislative representatives.

I think the past year has been successful and probably carried its usual amount of progress both in organization and scientific medicine throughout the state. Chicago, as it functions under its great society with many branches, is an integral part unto itself of our state organization, and functions most successfully under its capable and well-organized body. Of the many cordial invitations received from these branches, I have had the pleasure and opportunity of attending a few most interesting meetings. Its officers and councilors are inspired with the best traditions of medicine in meeting their difficulties and responsibilities, and I extend to them my sincere appreciation and thanks for their efficient cooperation with the officers of the State Society during the past year.

I wish to express my appreciation for the kindly and considerate assistance that has been given me by each member of the Council, as well as its chairman, and all the officials of the State Society. To all of these I extend my deepest gratitude.

Respectfully submitted,

Samuel E. Munson, M. D.

President, Illinois State Medical Society.

REPORT OF THE PRESIDENT-ELECT

To the Members of The House of Delegates:

This office is one to be seen and not heard, and not seen too frequently. I have attended every meeting of the Council and listened carefully to the proceedings in the hope of enriching my mind and better preparing myself for the duties of the coming year. A few county societies have been visited and the usual number of committee meetings have been attended.

As the result of these observations certain policies seem to me worthy of serious consideration by the Society. The present era of government spending encourages all tax spending bodies to ask for more money than they have ever before dreamed of getting, this money to be expended for every conceivable worthy purpose. Any other policy on the part of states and municipalities and their various departments would appear unthrifty at this time though doubtless most of them recognize the lack of wisdom of such policies when viewed from a long-time standpoint. Doubtless Departments of Health and Public Welfare follow such spending policies.

In view of these things it seems to me the Illinois State Medical Society would be performing a service helpful to itself and society in general if it insisted on scrutinizing the requests of all departments for money to be expended on public health measures. Specifically, requests from the Department of Public Health and the Division for Crippled Children in the Department of Public Welfare should have our attention. This is not with the idea of hampering or embarrassing these departments in any way, but only to learn whether all desirable objectives cannot be attained with the expenditure of less money. In some instances it might be possible to transfer activities from the Health Department to the private physician to the advantage of both. This move seems particularly desirable in the light of what has already been accomplished in St. Louis. The Health Department there, so I am told, abandoned a good many activities and transferred them to the private physician. This policy has resulted in improvement of the public health coincident with a considerable decrease in the amount of money spent until its per capita expenditures have been reduced to figures hitherto considered impossible of attainment.

Illinois might well seek to emulate or excel that record. Such an accomplishment would be a distinct public service and reflect credit on the Illinois State Medical Society and the Departments of Health and Public Welfare.

Respectfully submitted,

James H. Hutton, M. D.

President-Elect, Illinois State Medical Society.

REPORT OF THE SECRETARY

To the Members of the House of Delegates:

Your Secretary is desirous of presenting in this, his fifteenth annual report, some of the more important developments of the past year which pertain to the activities of this society and which affect the practice of medicine in general.

One of the most important considerations before the medical profession today is the movement under way to develop a federally supervised plan for providing medical care for the American people. In August 1935, the Interdepartmental Committee to Coordinate Health and Welfare Activities was appointed by the President. A Technical Committee on Medical Care was selected consisting of a chairman from the Children's Bureau, a member of the Social Security Board and three representatives from the United States Public Health

Service. Late in 1937 this Technical Committee was instructed to survey the health and medical care work of the United States Government. Early in this study, so we are informed, they developed two facts: "First: that existing services for the conservation of national health are inadequate to secure to the citizens of the United States such health of body and mind as they should have; and, second: that nothing less than a national comprehensive health program can lay the foundation for action adequate to the nation's need."

The National Health Conference was held in Washington July 18-20, 1938, and the principal item of business was the presentation of the proposal of the Technical Committee for a National Health Insurance Program. It was stated that the report and proposal would be made the basis for a bill which would probably be introduced during the next session of Congress in Washington. The Wagner Bill incorporates most of the recommendations made in the report of the Technical Committee. At the present time the Lewis Resolution, a new Capper Bill and the Wagner Bill are all in the Senate, and it seems quite probable that efforts will be made to centralize activities on the Wagner Bill which is Senate Bill No. 1620. Each member of this Society should write for a copy of this bill, become familiar with it, and be able to discuss the objectionable features with the Senators from Illinois, and the Representatives in the House. The last annual report of the Surgeon General of the United States Public Health Service should be read, and especially that portion in which it is stated that the United States is the healthiest nation in the world today, and that greater reduction in mortality and morbidity statistics have been made in the United States during the past two years than in any similar period.

THE COUNCIL

The Council, in its several meetings, has given much consideration to these problems along with many others which affect modern medicine and our society in any way. The Council has held meetings regularly during the past year at intervals of two months, with many matters of importance being discussed at each of the meetings. During the past year the routine order of business has been changed so that more time may be utilized on the more important matters which have developed from time to time. Many of the reports presented before the Council have been received in the secretary's office prior to the meeting, have been mimeographed and sent to all members so they would be able to discuss them more intelligently at the meeting. It is rare indeed that any member of the Council is absent from a regular meeting, and then only for just cause.

The Council added two new committees during the past year, and they have been asked to make their first reports to the House of Delegates.

At the suggestion of the American Medical Association, and because of changes in the Illinois Occupational Disease Act, it seemed advisable to create a Committee on Occupational Diseases. The committee

was organized late in the fiscal year, and as yet there has been but little opportunity for it to consider many of the things which are to be investigated along the line, of occupational diseases in industry, but in another year they should have a most interesting report to submit to the House of Delegates.

It was also deemed advisable to develop a Committee on Mental Hygiene, and the committee was appointed by the Council early this year.

The Committee on Maternal Welfare has rendered its second annual report and the activities are well outlined by the chairman. A recent news release from the Illinois Department of Public Health gave the interesting information that during the past year, another appreciable reduction was noted in both maternal and infant mortality rates in Illinois, and this state is once more, far below the nation's average in deaths among infants and mothers. These rates are lowest in the history of our state, and it is the desire of the Committee on Maternal Welfare and the many county organizations, to see a further reduction during the next few years.

THE ANNUAL MEETING

This is the second time in recent years that the annual meeting is being held in the city of Rockford, and we were able to make better arrangements for this meeting than for the previous one. It is becoming more difficult each year to find a building which can accommodate all the sections, general meetings, and all exhibits under one roof, and we are indeed fortunate in being able once more to find adequate facilities available for the 1939 annual meeting.

In 1940 the one-hundredth anniversary meeting will be held, and in making the arrangements we should plan for an outstanding meeting, and in the selection of the host city, the House of Delegates should keep this in mind and select that city which has apparently the best facilities available for an unusually big meeting.

Last year the House of Delegates added two sections to the list of five scientific sections conducting individual meetings during the annual session, and with the ever increasing number of both technical and scientific exhibits, there are only a few cities where adequate facilities are now available. Under the present By-Laws the preferential vote is given by the House of Delegates, and the final decision is left to the Council after a thorough investigation has been made.

THE 1939 MEETING

We desire to call to your attention the unusually fine scientific exhibits which our committee has selected for this meeting. It was impossible to accept all of the exhibits which could have been presented, and those which you will find on display at this meeting are all worthy of your time and attention. It is interesting to note that the exhibit which received first prize at our meeting last year was also awarded first prize in that class by the American Medical Association at the San Francisco Session.

The Technical Exhibits have been carefully arranged for this meeting and among the many on display you

will learn what the various manufacturers are doing for the medical profession. It will be worth your time to look over these exhibits carefully.

The House of Delegates at last year's meeting, approved the idea of having a Hall of Health and recommended that arrangements be made to have a bigger Hall of Health during the 1939 annual meeting. These health exhibits for the public will be found in the large new Armory, and it will be open from Monday to Thursday. Efforts have been made to publicize this Hall of Health more than was done last year, and we have every reason to believe that the attendance will be far greater than for the first venture along this line one year ago. Each member of this House of Delegates should visit the Hall of Health and see what the several committees have done to make it more popular than ever.

THE SOCIETY

Once more we are able to show a further increase in the membership in the Illinois State Medical Society, and it may be possible to reach the goal of 8,000 members by the end of this year.

A careful review of the various reports of Councilors in this handbook will show that hundreds of medical meetings are being held throughout the state, and even in many small counties there has been an increasing interest in the work of the societies, and successful meetings are being held regularly.

Once more we desire to call your attention to the fact that the Society has lost some loyal members of years' standing during the fiscal year which has just closed. One past-president, Dr. L. H. A. Nickerson of Quincy was recently called to his Eternal Rest after completing 65 years of practice. Dr. Nickerson was president of this Society in 1913.

Our Vice President, Dr. C. A. Earle of Des Plaines, also died during the past year after more than fifty years of practice. Dr. Earle was a regular attendant at the annual meetings, and had an unusual record in attending medical meetings in all parts of the country.

A number of members of the House of Delegates for many years have passed away: Dr. T. D. Doan of Palmyra for many years a county society secretary and a member of the House; Dr. C. D. Snively, Ipava, also a county secretary of years' standing; Dr. Edward Bowe of Jacksonville, and Dr. Shirley W. Lane of Kankakee who has been a member of the House and a regular attendant at the annual meetings. These men and many others, will be long remembered for their years of service for the best interests of their county and state medical societies.

We desire to take this opportunity to again thank the many faithful county society secretaries for their splendid cooperation throughout another year, and it is only through such cooperation that the usual spirit of harmony may continue to prevail within our organization.

THE EIGHTEENTH ANNUAL AUDIT

The eighteenth annual audit of the transactions of this society was made recently by Mr. Fred N. Setterdahl of Rock Island, and his report to the House of

Delegates is attached to this report. The Society is indebted to Mr. Setterdahl for the many valuable suggestions he has made throughout these years which have enabled us to improve our systems of recording and accounting. It is our opinion that we now have one of the best systems and sets of records which will be found in any state medical society throughout the country.

MEMBERSHIP DATA

Members Reported in Good Standing, May, 1938.....	7,640
Added During the Year:	
New Members	518
Reinstatements	48
	566
	8,206
Dropped During the Year:	
By Death	115
By Removal or Resignation.....	87
By Expulsion	1
For Non-Payment of Dues.....	184
	387
Members Carried on April 20, 1939.....	7,819
Net Gain	179

FINANCIAL REPORT OF THE SECRETARY

Receipts From County Societies			
Adams	\$ 64.00	Lawrence	\$ 96.00
Alexander		Lee	176.00
Bond		Livingston	405.00
Boone	104.00	Logan	88.00
Bureau	344.00	McDonough	216.00
Carroll	152.00	McHenry	160.00
Cass	164.00	McLean	688.00
Champaign	637.00	Macon	522.00
Chicago Medical		Macoupin	352.00
Society	26,873.00	Madison	847.00
Christian	212.00	Marion	264.00
Clark		Massac	56.00
Clay	113.00	Mason	
Clinton	24.00	Menard	45.50
Coles-Cumber-		Mercer	104.00
land	365.00	Monroe	80.00
Crawford	84.00	Montgomery	205.00
DeKalb	8.00	Morgan	323.00
DeWitt	128.00	Moultrie	56.00
Douglas	8.00	Ogle	205.00
DuPage	394.00	Peoria	1,624.00
Edgar	40.00	Perry	232.00
Edwards	24.00	Piatt	54.00
Effingham		Pike	176.00
Fayette	73.00	Pulaski	32.00
Ford	104.00	Randolph	136.00
Franklin	185.00	Richland	88.00
Fulton	269.00	Rock Island	661.00
Gallatin		St. Claire	24.00
Greene	88.00	Sangamon	941.00
Hancock	109.00	Saline	182.50
Hardin	19.00	Schuyler	53.00
Henry	288.00	Shelby	152.00
Henderson		Stephenson	496.00
Iroquois	189.00	Tazewell	224.00
Jackson	306.00	Union	282.00
Jasper		Vermilion	700.00
Jefferson-Ham-		Wabash	136.00
ilton	184.00	Warren	160.00
Jersey	8.00	Wayne	72.00
JoDavieess	72.00	Washington	120.00
Johnson	32.00	White	96.00
Kane	688.00	Whiteside	234.00
Kankakee	266.00	Williamson	200.00
Knox	385.00	Will-Grundy	911.00
Lake	376.00	Winnebago	1,024.00
LaSalle	560.00	Woodford	104.00
Total			\$47,942.00

Subscriptions	\$ 128.15
Exhibits	3,467.50
Interest, Treasurer's Account	2,579.17
Bonds Called	6,000.00
Journal	15,000.00
Refunds	42.69
Bond Premiums	160.00
Chicago Medical Society Appropriation for Legal Expenses	500.00

Total Receipts\$ 75,819.51

RECEIPTS AND PAYMENTS

May 1, 1938, to April 21, 1939

Receipts

County Societies	\$47,942.00
Exhibits	3,467.50
Subscriptions	128.15
Interest:	
Treasurer's Account	50.00
Bonds	2,529.17
Journal Advertising	15,000.00
Refunds	42.69
Bonds Called	6,000.00
Bond Premium	160.00
Chicago Medical Society Appropriation for Legal Expense.....	500.00

Total Receipts\$ 75,819.51

Distribution of Receipts

General Fund	\$30,226.90
Medico-Legal Fund	14,684.76
Legislative Fund	7,789.82
Journal Fund	23,118.03

Total Distribution\$ 75,819.51

Cash Balance, May 1, 1938..... 50,433.17

Total\$ 12,252.68

Payments

General Fund	\$45,328.16
Medico-Legal Fund	3,756.15
Legislative Fund	6,331.08
Journal Fund	22,603.75

Total Payments\$ 78,019.14

Cash Balance, April 21, 1939..... 48,233.54

Total\$126,252.68

Cash Balances April 21, 1939

General Fund	\$ 5,858.58
Medico-Legal Fund	16,579.27
Legislative Fund	13,414.47
Journal Fund	12,381.22

Total Cash Balance\$ 48,233.54

NOTE: Fund Balances transferred from Medico-Legal Fund, \$10,000.00; Journal Fund, \$5,000.00; Total, \$15,000.00; to General Fund, \$15,000.00.

Respectfully submitted,

Harold M. Camp, M. D.,
Secretary.

FRED N. SETTERDAHL

Public Accountant
224 Robinson Bldg.
Rock Island, Ill.

April 22, 1939.

To the Members of the House of Delegates:
Illinois State Medical Society.

CERTIFICATE OF AUDIT

I have audited the accounts of your Society as follows:

Secretary's Accounts: Dr. H. M. Camp, Secretary, from May 1, 1938, to April 21, 1939.

Journal Accounts: Dr. C. J. Whalen, Editor, from May 1, 1938, to March 31, 1939.

Educational Committee: Miss Jean McArthur, Secretary, from May 1, 1938, to April 15, 1939.

Treasurer's Accounts: Dr. A. J. Markley, Treasurer, from May 1, 1938, to April 21, 1939.

SECRETARY'S ACCOUNTS:

Receipts: I have verified the membership dues received from the County Societies with duplicate receipts and verified same with card ledgers. Also compared the Secretary's Report as published. Journal Receipts from the Editor were verified with the Editor's accounts. Other Receipts consist of Exhibit Rentals, Subscriptions to Journal, etc.

Payments: Orders are drawn by the Secretary for payments which are charged to the various Funds, and are supported by approved vouchers, invoices, etc. This year your General Fund payments exceeded the General Fund Receipts by \$18,000.00 and it was necessary to transfer \$10,000.00 from the Medico-Legal Fund, and \$5,000.00 from the Journal Fund. Receipts from bonds called were credited to the Journal Fund \$3,000.00 and Medico-Legal Fund \$3,000.00. I will complete the Audit of the Secretary's Accounts up to May 1, 1939, and include the balance of the month of April in my regular Audit Report to the Council. I will also complete the Audit of the other accounts so as to show a full year of all departments in my annual report. On account of your Annual Meeting being earlier this year it was necessary to close these accounts for reports to be published. Your Secretary will also have a supplementary report for the balance of April, which totals should agree with my detailed report.

JOURNAL ACCOUNTS:

Receipts: Collections for advertising are made direct to the Editor.

Payments: Commissions for securing advertising and postage are paid direct by the Editor. All other payments are made from the Secretary's office.

EDUCATIONAL COMMITTEE:

Receipts: Appropriations made from the General Fund and refunds for mimeograph work comprise the Receipts.

Payments: Salaries and expenses are paid by check and supported by approved invoices, etc.

TREASURER'S ACCOUNTS:

The Treasurer's accounts consist of the Bank accounts which have been reconciled with the Secretary's records. Interest has been received regularly from funds invested in Bonds with one exception during the past year. Bonds have been called amounting to \$6,000.00.

All funds are deposited in the name of the Society and bonds are held in trust by the State Bank and Trust Company of Evanston, Illinois. All Cash Balances were verified, together with the Bonds on hand, and found to agree. The General Funds are deposited with the State Bank and Trust Company of Evanston, Illinois, and the National Bank of Monmouth, Illinois. The Educational Fund and Journal Fund accounts of the Editor are deposited with the First National Bank of Chicago, Illinois.

The records of your various departments have been well kept and in my opinion represent the true transactions for the year. A detailed report will be furnished the Council for the full year ended April 30, 1939.

Respectfully submitted,

Fred N. Setterdahl,
Licensed Public Accountant.

The Secretary: Under our constitution and by-laws it is necessary for the Secretary to make an annual report for the fiscal year, May 1 to April 30. Owing to the fact that this meeting was held so early in May it was necessary for the auditor to certify our finances for publication in the handbook on April 20, and we have a supplementary report for the ten days, April 20 to May 1. In our printed report we show that our expenditures exceeded the receipts by

a few thousand dollars, but the supplementary report shows additional receipts of \$10,053.00. That meant that a great many County secretaries sent in remittances they have been collecting during the fiscal year. This makes a total of \$59,077.54. That gave us a slight margin in black instead of red as appears in the published report. The supplementary report is as follows:

April 21, 1939, to April 30, 1939

RECEIPTS

County Societies	\$10,053.00
Exhibits	285.00
Subscriptions	6.00
Journal Advertising	500.00

Total Receipts\$10,844.00

Distribution of Receipts:

General Fund	\$ 4,369.08
Medico-Legal Fund	2,450.38
Legislative Fund	1,633.56
Journal Fund	2,390.98

Total Distribution\$10,844.00

Cash Balance April 21, 1939.....48,233.54

Total\$ 59,077.54

PAYMENTS

General Fund	\$ 454.24
Medico-Legal Fund .....	.....
Legislative Fund .....	.....
Journal Fund .....	.....

Total Payments\$ 454.24

Cash Balance April 30, 1939..... 58,623.30

Total\$ 59,077.54

Cash Balances:

General Fund	\$ 9,773.42
Medico-Legal Fund	19,029.65
Legislative Fund	15,048.03
Journal Fund	14,772.20

Total Cash Balance.....\$ 58,623.30

Cash Balance deposited as follows:

National Bank of Monmouth, Ill.....	\$29,522.15
State Bank and Trust Co., Evanston, Ill.	29,101.15

Total\$ 58,623.30

Respectfully submitted,

Harold M. Camp, M. D.
Secretary.

REPORT OF THE TREASURER

May 1, 1938, to April 21, 1939

To the Members of the House of Delegates:

Your Treasurer wishes to make the following report:

RECEIPTS

From Secretary	\$52,080.34
From Editor	15,000.00
Interest on Deposits.....	50.00
Interest on Bonds.....	2,529.17
Bonds Called	6,000.00
Bond Premiums	160.00

Total Receipts\$ 75,819.51

Balance May 1, 1938..... 50,433.17

Total\$126,252.68

PAYMENTS

General Fund	\$45,328.16
Medico-Legal Fund	3,756.15

Legislative Fund	6,331.08
Journal Fund	22,603.75

Total Payments\$ 78,019.14
Balance April 21, 1939..... 48,233.54

Total\$126,252.68
All Funds are deposited in the name of the Illinois State Medical Society.

Deposited with the State Bank and Trust Company
of Evanston, Illinois.....\$ 24,055.39
Deposited with the National Bank of Monmouth,
Illinois 24,178.15 |

Total\$ 48,233.54

Held in Trust, at the State Bank and Trust Com-

pany, Evanston, Illinois—
Bonds at Par Value.....\$ 58,000.00

Total Cash and Bonds.....\$106,233.54

Respectfully submitted,

A. J. Markley, M. D.,
Treasurer.

The Secretary: I also have a supplementary report for the Treasurer.

SUPPLEMENTAL REPORT OF THE TREASURER

From April 21, 1939, to April 30, 1939

To the Members of the House of Delegates:

RECEIPTS

From Secretary	\$10,344.00
From Editor	500.00

Total Receipts\$10,844.00

Balance April 21, 1939.....\$48,233.54

Total\$ 59,077.54

PAYMENTS

General Fund	\$ 454.24
Balance April 30, 1939.....	58,623.30

Total\$ 59,077.54

All Funds are deposited in the name of the Illinois State Medical Society.

Deposited with the State Bank & Trust Company,
Evanston, Illinois \$ 29,101.15 |

Deposited with the National Bank of Monmouth,
Illinois 29,522.15 |

Total\$ 58,623.30

Held in trust, at the State Bank & Trust Company.

Evanston, Illinois—Bonds at Par Value..... 58,000.00

Total Cash and Bonds.....\$116,623.30

Respectfully submitted,

A. J. Markley, M. D.,
Treasurer.

REPORT OF THE CHAIRMAN OF THE COUNCIL

To the Members of the House of Delegates:

During the past year the Council has been working in a very efficient manner. There has been the most excellent cooperation and complete harmony among all the members. The committees have worked efficiently and the members of these committees have donated freely of their time to make the work successful.

Due to the fact that so many new conditions have arisen and so many additional calls have been made on the time of the Council it has been necessary to change the business proceedings rather decidedly. The

members have been compelled to hold two or three more meetings a year than they formerly did; and numerous committees that formerly reported at each Council meeting have been instructed to report only once or twice a year, and to have each report typed and then abstracted so that in many cases they could be studied by the Councilors prior to the meeting, so, with an abstracted report from the chairman of each committee a great deal of time has been saved. This has been accomplished we feel without any lessening of efficiency on the part of the committees and with an increased efficiency in the Council.

Important matters of business, whenever possible, have been submitted to the Councilors in advance of the meeting. As a result of this opportunity to study conditions before they are presented officially, many affairs that might have been controversial have been handled in a very satisfactory manner and it is believed, to the best interest of the members of the society. Particular reference here is intended, among other things, to the Farm Security Administration. Here an apparently simple plan of medical care for the farmers was, after some study, found to be a very probable method of starting Socialized Medicine in the rural communities.

Three new committees have been formed. One, the Interprofessional Relations Committee, which it is hoped will be able to bring our society into closer official relations with the dentists, druggists, lawyers, nurses, hospitals, and similar organizations. These organizations have problems similar to our own and if by working with them we can present a united front, our problems can be managed more effectively.

The Occupational Therapy or Industrial Hygiene Committee was appointed at the request of the A. M. A. to cooperate with their committee along this line. This is a new committee and has not as yet been able to accomplish a great deal, but more is expected of it in the coming year.

The most interesting development has been with the Medico-Legal Committee. Two years ago, when we had to change the method of legal aid to our members, it was thought by many that the Medico-Legal Committee would diminish in importance. Actually, the reverse has occurred. The committee is now able to come out more openly in the aid of legally distressed members than it ever could before. Another result has been a decided diminution in the number of law suits filed during the past year, and the greater ease with which these cases have been handled under the direction of our efficient chairman, Dr. Ballinger.

Considerable time and thought has been spent on a problem brought up last year. That is, of a home for aged, indigent doctors. It will probably be some time before any satisfactory plan is completed but two suggestions have been received both based on the principle of a sufficient endowment. One plan is to establish a home for this purpose; the other, that of having a pension fund developed so that the aged doctor and his family can continue to live, and if possible, to practice in the community in which he has spent his active years. This plan has seemed to meet the greatest favor, but

it is still not a settled question and the committee that is considering it has many problems to solve before specific recommendations can be made.

As we anticipated last year, the fiscal year of 1938 and 1939 has been characterized by a concentrated series of magazine articles attacking the medical profession. Most of these attacks are of the patent medicine testimonial type. Statements that are either entirely false or are half truths are made and then some very unfair and vicious conclusions drawn by the writer of the article. It is the opinion of more and more medical men that these articles were intended as part of a build-up to help in the socialization of medicine and the communization of the United States.

The political changes of last November resulted in a decided modification of the legislative attack on the medical profession but unless we remain alert to our responsibilities, the same danger will threaten us next year. Due to the efficiency of our Legislative and Medical Economics Committees an overwhelming majority of the recently elected representatives to Washington went there pledged to oppose this pernicious type of legislation. While we realize that political promises do not always materialize into action, nevertheless we feel that such promises are far better than open opposition, and we also believe that if the other state societies were any way nearly as efficient in these activities as is our own, the medical legislative menace from Washington would be much less than it is. The Legislative Committee continues to be one of our strongest bulwarks, and its chairman one of our most valuable members. With the support of his committee, Dr. Neal has been able to render excellent service not only to the Medical Profession but to the people of the State of Illinois by his remarkably efficient work in keeping up the standards of medical education in the state.

The financial condition of the society is satisfactory in spite of numerous added expenses. The Legislative Committee has had increased obligations and expenses, and now instead of functioning only during the session of the legislature, has to be on the alert the year round. The Educational and Scientific Service Committees have had increased costs. In return, we are receiving a service that compares favorably with that of any other State Medical Society.

In closing the chairman wishes to thank the members of the Council and the Committees who have so efficiently rendered service to the State Society this year; and, he wishes particularly to commend the Secretary who has worked tirelessly and with a degree of efficiency that can be equalled by very few men. Those who are acquainted with his work, know that without doubt he is the most efficient State Secretary in the country, and that his personal efforts, with a very small office force, have given us the highest degree of efficiency with the least cost of any State Society which helps comprise the American Medical Association.

Respectfully submitted,

E. P. Coleman, M. D.,

Chairman of The Council.

Dr. E. P. Coleman, Canton: There is one brief addition to my report. There have been many comments by members that the Department of justice was going to take action against the Wisconsin Medical Society and all other medical societies for the collection of income taxes back to 1903. We have sought legal opinion. The opinion is that we are not liable for back income taxes. We may be liable for Social Security and Unemployment taxes. Mr. Setterdahl, our auditor, will meet with the Council on Thursday to give some definite opinions on that subject.

REPORT OF THE COUNCILOR OF THE FIRST DISTRICT

To the Members of the House of Delegates:

The First Councilor District is honored to have the State Society meet this year in Rockford, and I am sure every member in the district welcomes the State Society at the annual meeting.

Most of the Medical Societies have had their regular meetings and have been well organized to give very splendid programs. These programs have been augmented by meetings on obstetrics, and pediatrics which have been well attended, and I believe has been well received by most of the physicians.

The crippled children's clinic has had a large attendance and I believe the medical profession would be interested in a summary of the work that has been done.

The Women's Field Army on Cancer Control has been better organized than ever, more of an interest has been taken in it and the membership has more than doubled this year. Numerous talks have been given and the public is very much interested in this phase of our work.

The care of the indigent with resulting economics continues to be the problem which has not been solved to the entire satisfaction of any Medical Society. Physicians are continuing to give of their services in the hope that we will gradually establish a sound system for the care of the medical indigent.

Respectfully submitted,
Edward H. Weld, M. D.,
Councilor First District.

REPORT OF COUNCILOR OF THE SECOND DISTRICT

To the Members of the House of Delegates:

The Councilor of the Second District is pleased to report that the past year has been a successful one. All of the County Societies have been active and well managed by their officers. Membership is satisfactory and the attendance at meetings has been excellent largely because of the fine quality of the scientific programs provided with the assistance of the Educational Committee. Meetings are held regularly, in most instances monthly. All of the counties in the district except Marshall and Putnam, which are very small, have societies. Most of the doctors in these two counties are members of adjoining county societies.

The District has held its Maternal Welfare meeting and is organized to carry on this program. Already a little work has been done, although in the opinion of the Councilor, the need for it in this district is not very acute.

There have been no serious problems in the Second District during the year that has just passed.

Respectfully submitted,
Edgar C. Cook, M. D.,
Councilor Second District.

REPORT OF COUNCILORS OF THE THIRD DISTRICT

To the Members of the House of Delegates:

The active membership of the Chicago Medical Society as of March 1, 1939, is 4,234, about 150 less than that of the same date of last year.

The economic survey requested by the A. M. A. has been completed in Cook County under the direction of the Committee of Medical Economics of the Chicago Medical Society, and a 300-page report has been typed. It is with a feeling of relief that this gigantic undertaking is behind us. Its benefits to the profession are still a mystery to most of us.

The recommendations of the Chicago Board of Health, in collaboration with our Maternal Welfare Committee, for guidance of all obstetrical departments, have been in operation in Chicago hospitals since May 1, 1938. During the period of the last eight months of 1938 the Board of Health reports a reduction of 10 per cent in maternal mortality, and 14 per cent in infant mortality, over the same period of 1937. Also a great reduction in Caesarian operations is reported. Such statistics were contained in a letter from Dr. Robert A. Black, acting president of the Board of Health, to Dr. Charles B. Reed, chairman of the Public Relations Committee of the Chicago Medical Society.

Group hospitalization, which we so thoroughly condemned a few years ago, is increasingly popular in Chicago. Since it has been sanctioned by the House of Delegates of the A. M. A., and later by the Council of our state society, the Chicago Medical Society has also added its stamp of approval. However, it is felt that any company offering such insurance should comply wholly with our requirement that its plan not encroach upon the practice of medicine before it receives our endorsement.

It is hoped that some plan for care of our needy aged members will receive serious consideration by this House of Delegates.

Respectfully submitted,
John S. Nagel, M. D.
Percy E. Hopkins, M. D.
L. E. Day, M. D.
Councilors of Third District.

REPORT OF COUNCILOR OF THE FOURTH DISTRICT

To the Members of the House of Delegates:

To a very large extent the activities and opinions of

the Councilor are submitted under the report of the Chairman of the Council.

The condition of the individual County Medical Societies in this District is much the same as they were in the preceding year. The Councilor has followed the usual custom of visiting each society if and when invited to do so, and with one exception, due to a conflicting engagement, was able to attend whenever invited.

Throughout the entire district there has been a noticeable increase in the consciousness of the members of the importance of combating State intervention in the Practice of Medicine. Due to this, an increasing number of doctors have been addressing their local social and church organizations and are unquestionably exerting a very effective educational campaign to combat the unfair attacks published in some of the recent magazines.

The membership of the various county societies in this district is as follows:

Rock Island County: Number of physicians in the county, 119. Members of the society, 90. Number of meetings per year, 10. Average attendance, 50.

Schuyler County: Number of physicians in the county, 9. Members of the society, 6. Number of meetings per year, 2. Average attendance, 5.

Hancock County: Number of physicians in the county, 31. Members of the society, 20. Number of meetings per year, 6. Average attendance, 8.

Henry County: Number of physicians in the county, 43. Number of members from Henry and Stark Counties, 43. Number of meetings per year, 4. Average attendance, 35.

Stark County has no organization but there are 10 doctors in the county, 6 of whom belong to the Henry County society.

Peoria County: Number of physicians in the county, 250. Members of the society, 195. Number of meetings per year, 20. Average attendance, 80.

Warren County: Number of physicians in the county, 25. Members of the society, 24. Number of meetings per year, 2. Average attendance, 60. The Monmouth Physicians' Club, which holds regular monthly meetings, to a very large extent carries on the function of the county society.

McDonough County: Number of physicians in the county, 35. Members of the society, 27. Number of meetings per year, 10. Average attendance, 25.

Knox County: Number of physicians in the county, 61. Members of the society, 43. Number of meetings per year, 5. Average attendance, 24.

Fulton County: Number of physicians in the county, 47. Members of the society, 38. Number of meetings per year, 10. Average attendance, 25.

Mercer and Henderson Counties did not report.

From this it can be seen that the larger societies are functioning very efficiently, having frequent meetings of scientific value and maintaining thereby an excellent attendance. The record of the smaller societies does not look so good but it should be remembered that they frequently have only organization meetings, that their officers cooperate efficiently with the committees

of the State Society, and that the membership attends the larger meetings of the stronger nearby societies.

It is quite noticeable that many doctors in the smaller communities are taking time from their busy practices to attend meetings in which they are interested, even at a considerable distance from home. There is no question but that these men are high grade, scientific doctors, and that they are bringing back to their communities added knowledge which is manifesting itself in the excellent record this District has in infant and maternal mortality, as well as in the general mortality rate in these communities. It is here that one can see the results of the excellent work done by Miss McArthur's committee.

Respectfully submitted,
E. P. Coleman, M. D.,
Councilor Fourth District.

REPORT OF COUNCILOR OF THE FIFTH DISTRICT

To the Members of the House of Delegates:

During the past year the Councilor has attended both regular and special meetings in the various counties of the Fifth District. He has attended all meetings of the Council during the year. There has been but little change in conditions affecting the profession over those of a year ago. The membership in the Fifth District is practically the same as last year, new members being about equal in numbers to those lost by death and removal. The deaths have increased considerably over the previous year.

It seems that all the agitation and criticism of the profession from the administration at Washington has not injured the doctors. In fact we feel that the very unjust and biased criticisms have strengthened the ties of friendship among the physicians and have awakened the public to a realization that the medical profession has done and is continuing to do a creditable work in caring for those in the lower income groups. Any lack of care rendered to the indigent is largely due to the failure of the authorities to provide sufficient funds and is not due to the refusal of physicians to render services.

The organization of the Fifty Year Club has proved to be a good move. It is certainly proper to honor these men who have served so many years in the practice of medicine and they have shown their appreciation of this recognition.

Respectfully submitted,
Ralph P. Peairs, M. D.
Councilor Fifth District.

REPORT OF COUNCILOR OF THE SIXTH DISTRICT

To the Members of the House of Delegates:

The Councilor of the Sixth District begs to report very satisfactory conditions in the District.

All County Societies have been visited during the year. Meetings are held regularly and good programs presented by local and outside speakers. Two adjoining county societies holding meetings irregularly are now holding meetings regularly by alternating each month.

Again I wish to call to the attention of the House the problem of caring for the low income group. While most of us in this district are working out our own problem by making our charges fit the patient's pocket-book, I feel there should be a state program for this group.

The matter of First Aid Stations has apparently been abandoned, as I see very few of them on my trips through the district.

Considerable interest is being shown by members throughout the district on State Medicine and all are well informed on the subject and are cooperating with the Councilor and Dr. John Neal of the Legislative Committee.

My only criticism at this time is that County Society Secretaries have a habit of hurrying through their business sessions in order to give the speakers more time. Those business sessions are frequently very important and all communications from state society officers should be read through and discussed freely, especially during sessions of the legislature, as all sorts of bills are being presented in which we, as physicians, are vitally concerned.

I want to thank all county secretaries and members for their hearty cooperation during the year.

Respectfully submitted,

Thos. B. Knox, M. D.

Councilor Sixth District.

REPORT OF COUNCILOR OF THE SEVENTH DISTRICT

To the Members of the House of Delegates:

This has been a very busy year for the Councilor of the Seventh District. Have attended all of the regular and special council meetings, special committee meetings, special meetings of the House of Delegates of the American Medical Association, the Northwest Regional Conference and two meetings of the State Maternal Welfare and Child Hygiene Committee. Have been in touch with the component societies, either by correspondence or visits and find them, for the most part, functioning in the usual manner. Have reserved official visits to those component societies requesting same and am glad to report that there has not been any special problems for the Councilor to aid in solving during the past year.

In summarizing the work in the various counties of this district, I find that scientific meetings have been held on monthly and quarterly intervals during the year. The interest and attendance has been above the average. The prevailing attitude of most of the members toward Maternal Welfare, and Child Hygiene, Crippled Children's Work and Venereal Disease Program, has been very cooperative. In not a few counties, several public meetings have been held in the interest of Maternal Welfare and Child Hygiene especially. Most of the county societies have expressed a desire for several monthly meetings on Maternal Welfare and Child Hygiene with a discussion of the many phases of the problem.

The present plan for medical relief to the indigent

has been administered on a fee basis with free choice of physicians in most cases. Since most of the counties of the Seventh District are rural, many of the physicians of these counties favor the medical care project as set up by the Farm Security Administration as a means of remuneration for medical services rendered such families. While this project was not endorsed by the Council as a whole, the Councilor of the Seventh District favors same.

The group hospital plan is working very satisfactorily in several hospitals of this district. This plan is under the control of the physicians.

Clinical pathological conferences conducted by the pathologists of the various hospitals are gaining in importance. Many of these conferences are on a par with the hospitals of the larger teaching centers of the state, and the physicians realize that they play an important part in the work of the medical society.

The counties of this district have not shown much interest in the cancer campaign as sponsored by the Women's Field Army.

Your Councilor desires to thank all County Secretaries and members for their hearty cooperation during the past year.

Respectfully submitted,

I. H. Neece, M. D.,

Councilor Seventh District.

REPORT OF COUNCILOR OF THE EIGHTH DISTRICT

To the Members of The House of Delegates:

The County Medical Societies comprising the Eighth Councilor District have been quite active during the past year and have shown greater interest in the problems concerning organized medicine. The membership has been well maintained in the different societies, with the addition of several new members. I understand that with the exception of one or two of the counties, the Societies of this District are one hundred per cent in their reports to Secretary Camp. There were four deaths reported in the District during 1938: Dr. W. M. Homn, Champaign; Dr. John Martin, Toledo; Dr. A. L. Brobeck, and Dr. F. P. Johnson, Hoopston (Fifty-Year Men). Two members are eligible this year to the Fifty-Year Club: Dr. J. C. Dodds of Champaign and Dr. T. E. Walton of Danville.

Public meetings have been held in some of the counties and there appears to be an increased interest on the part of the public in State Medicine. Douglas County reports having held three public meetings for lay educational purposes, which were well attended. It was my privilege to attend one of these meetings at Tuscola and I was pleased to see the interest taken by the lay people.

The care of the indigent is still a major problem in most of the counties; however, two or three of the societies report that the medical care of the indigent is satisfactory to its members. Most counties are having difficulty in obtaining sufficient funds to care for those on relief and particularly the medical care.

In Vermilion County we have rather an unusual situation. Like many other counties the Board of Super-

visors have insufficient funds to care for the indigent, in the way of housing, clothing, food and medical care. At their regular meeting in March, the Board of Supervisors discussed the medical care of the indigent with a committee from our County Medical Society. It was brought out that quite a group, other than those on relief, were unable to pay for medical care. Among those who may be termed "medically indigent" are most of those on W. P. A., the old age pensioners and mothers receiving a pension. The Board of Supervisors took the position that there had never been a ruling by the courts to place the responsibility for the medical care of these groups and that they had no authority to do so. With this understanding, the Vermilion County Medical Society is bringing a friendly suit against Vermilion County and Danville Township to clarify this situation. The suit will be presented before one of our circuit judges and then taken direct to the Supreme Court of the State. W. M. Acton, the attorney for the Vermilion County Medical Society, thinks a decision may be handed down by the Supreme Court in October, 1939.

About three years ago, the Board of Supervisors refused to pay the hospital and doctor for the care of an accidental injury to a transient, after an order had been issued by a supervisor. Suit was brought, sponsored by the Vermilion County Medical Society and was taken to the Supreme Court of the State. The decision was that the County must take care of the transient. As a result of this decision, several doctors throughout the State have collected fees for the care of transients without the necessity of bringing suit.

It has been my privilege to attend all the regular meetings of the Council except one (June). I have attended a number of the regular meetings of the county societies in this District and there is always evidence of active interest in organized medicine.

Respectfully submitted,

C. E. Wilkinson, M. D.,
Councilor Eighth District.

REPORT OF COUNCILOR OF THE NINTH DISTRICT

To the Members of The House of Delegates:

The Ninth Councilor District is composed of 14 counties in the southeastern part of the state. Some of these counties have a goodly number of physicians, and some have but few. There are 12 organized societies in the Ninth District; one small county has no organization, and one small county, Hamilton, is combined with Jefferson in an organization. The Jefferson-Hamilton County Society, the Wayne County Society, Franklin, Williamson and Saline County Societies have regular monthly meetings, and splendid scientific programs. Three counties, Johnson, Pope and Massac, have a tri-county organization, and have monthly meetings. Some of the small counties, Edwards, Wabash, White and Gallatin, have meetings occasionally. However, many of the physicians in these counties attend the scientific programs held in other parts of the district.

During the past year, much interest has been manifested by the physicians in the Ninth Councilor District,

in good scientific programs and the meetings have been well attended.

In practically all of these organizations they have had one or two good obstetric programs during the past year. Physicians in the district have also appeared before a number of lay groups, and discussed and emphasized the importance of pre-natal care in lessening the morbidity and mortality of mothers and babies.

The activities of the Maternal Welfare Committee has been largely responsible for stimulating these programs.

The organized medical profession in the Ninth District has kept close contact with the members of the legislature and our congressmen, and has used every effort to acquaint them with the views of organized medicine, concerning vicious medical legislation which has been introduced by our Congress and in our State.

So far as I know, there have been no malpractice suits in the Ninth District, and everything has been harmonious with the profession. I think that the medical organization in the Ninth Councilor District is in fairly satisfactory condition.

Respectfully submitted,

Andy Hall, M. D.,
Councilor Ninth District.

REPORT OF COUNCILOR OF THE TENTH DISTRICT

To the Members of the House of Delegates:

Members of the profession have been active in many ways during the past year. Many meetings for discussion of Medical and Health subjects have been held. In other words it has been an educational year. Maternal welfare has been discussed in every county. Cancer control has received a share of our attention and Scientific Medicine has not been neglected. There is a growing feeling that we should cooperate with our State Department of Health, and wonderful things have been accomplished in preventive medicine. St. Clair County with more than a hundred members had twelve meetings. Doctors Bock, Starkel and Portuondo were elected to Emeritus Membership and the last named died during the year. He with Doctors J. B. Scruggs and Wendel Stewart constituted the deceased list of members. St. Clair County's Belleville Branch held twelve meetings and have been engaged in every activity of the profession. All meetings were well attended.

All eligible members of the profession in Alexander County are members of the County Society. Crippled Children's Clinics and a W. P. A. Social Hygiene Clinic were taken care of by the doctors. Various immunization programs were conducted by the County Society.

Perry County like Alexander has every eligible practicing physician enrolled as a member. Nine meetings during the year. Union County also has every physician a paid up member, also had nine meetings last year. Jackson County had ten well attended meetings.

Monroe also had ten meetings and during the early part of the year lost by death Dr. J. C. Fuels, an Emeritus member.

Washington, Randolph and Pulaski did not have so many meetings but are all organized and doing their part.

There has been much discussion of State Medicine in the district and it is opposed by practically all.

A few favor prepaid medical care and a large per cent favor prepaid hospital care. Few if any favor having politically controlled medicine. We have kept in touch with our State Representatives and gave a dinner to one of our Congressmen. We believe this method the best for us under present disturbing conditions.

Respectfully submitted,

J. S. Templeton, M. D.
Councilor Tenth District.

REPORT OF COUNCILOR OF THE ELEVENTH DISTRICT

To the Members of the House of Delegates:

This has been a very successful year in the Eleventh District. Every component County Society has held regular meetings, which have been well attended. Membership is increasing and interest in the problems of the medical profession is at the highest point.

The four largest societies, in point of membership, have had regular meetings, which have been well attended and most interesting and diversified as to subject matter presented. Will-Grundy continues to have regular weekly meetings with outstanding speakers from Chicago, who in the course of the year present the major problems of medicine in a manner which gives the members of the Will-Grundy Society a post-graduate course in their home town. A diminution in their membership roll is due to the dropping from the active list all the members in arrears for their 1938 dues. It is to be hoped that the majority of these members will soon be reinstated. Ford County Society is strictly rural and has relatively few potential members. However, most of the available men are members of the society, and two or three meetings are held each year. The membership is enthusiastic and attends many of the meetings in nearby county societies.

There have been no serious problems in the Eleventh District the past year. The affairs of the societies have been ably handled by the local officers so that very little has been required of the Councilor, who, although he has visited most of the component county societies, has this year, as in the past several years given the major part of his time to the Medical Economics Committee.

During the past year, Kankakee County Medical Society lost a most loyal member, Dr. S. W. Lane of Kankakee. Dr. Lane has been a member of the House of Delegates for many years, and in addition was a member of the Public Relations Committee. He was thoroughly conversant with the affairs of the Illinois State Medical Society and his advice and assistance will be missed.

Below is a detailed report of the component societies of this district, as reported by the local county secretaries in answer to a questionnaire sent them.

DuPage: Members, 1938, 60; 1937, 61; Deaths, 2; New members, 6; Meetings, 10.

Ford: Members, 1938, 18; 1937, 18; Deaths, 1; New members, 1; Meetings, 2.

Kankakee: Members, 1938, 50; 1937, 50; Deaths, 1; New Members, 6; Meetings, 9.

Iroquois: Members, 1938, 25; 1937, 23; Deaths, 0; New members, 3; Meetings, 12.

Will-Grundy: Members, 1938, 86; 1937, 89; Deaths 5; New members, 7; Meetings, 31.

The loss in Kankakee County is due to changes in the medical staffs of the two state institutions in the county. Membership on the staff changes frequently and recently the new members have not been interested in organized medicine to the extent they were a few years ago when they were making a successful fight to have their pay cut restored and needed the help of the Illinois State Medical Society. However, the loss in the entire district is slight, and the major portion can be attributed to improved bookkeeping, whereby delinquent members are being dropped in accordance with the Constitution and By-Laws of the State Society.

Every component society has had special activities in addition to cooperating with the staff meeting of their local hospitals.

The Councilor wishes to thank the members and officers of the component societies for their cooperation in the past year and requests a continuation in the coming year.

Respectfully submitted,

E. S. Hamilton, M. D.
Councilor Eleventh District.

REPORTS OF COUNCILORS-AT-LARGE

To the Members of the House of Delegates:

The principal feature of this year's work in the Chicago Medical Society was the adoption of the report on Maternal and Child Welfare which was devised by a Committee composed of members of the Chicago Medical Society, the Chicago Gynecological Society and the Chicago Pediatric Society.

This committee carefully studied the fatalities sent in to the Board of Health and agreed that many of them could be avoided by a more careful supervision.

This supervision was promptly furnished by the Board of Health under the provisions of the Towns and Villages Act as amended and passed by the legislature in 1935.

In the period since this change was made the maternal mortality has diminished 10 per cent and the infant mortality 14 per cent. Illinois has today the lowest death rate for mothers and infants to be found anywhere in the United States.

Respectfully submitted,

Charles B. Reed, M. D.
Councilor at Large.

To the Members of the House of Delegates:

As Councilor-at-Large, it has been my privilege and duty to participate in the meetings of the Council of the Illinois State Medical Society. The Council, as a

unit, has been able to work out serious medical and economic problems in harmony and fine cooperation.

In attending a number of public functions, clinics for crippled children throughout the state, groups studying infantile paralysis, and many other important problems, I have endeavored to work for the interest of the general practitioner.

It is my duty, as well as the duty of every delegate present at this meeting, to sit in every one of the General Sessions and meetings of our House of Delegates. You can always help guide if you cannot lead.

One by one there are more medical officers of the State and Federal Governments assisting in medical care. Mental health has become state supervised, so, also has tuberculosis. There are people working toward the solution of the cancer problem as a function of the State.

You should each remind your county society members to do their pre-school, pre-natal, and immunization work conscientiously or the state will be assuming this work as a part of their medical program.

Respectfully submitted,

Rolland Lester Green, M. D.

Councilor-at-Large.

REPORT OF THE EDITOR

To the Members of the House of Delegates:

Confronting the new year and closing the old, the ILLINOIS MEDICAL JOURNAL continues preaching a gospel of faith and courage in the earliest principles of medicine, to a country wracked by mental and economic chaos, and bombarded by theorists both lay and medical, and a profession harrassed most bitterly.

This is of course an old, familiar job for your periodical. Some twenty-five years ago its editor forecast the probabilities of that turn in events that later became possibilities, and that now are actualities. Only too often he was hailed as an incurable pessimist and a Jules Verne of misfortune. That lay interference, bureaucratic control of the practice of medicine, and federal management of one of the two oldest and most sacred professions, could ever attain the maximum of power that they have attained in the last five years was beyond the wildest dreams of all but a few men. Those men who were vested with this prescience in that earlier day preached the doctrine of medical organization to fight for medical rights. Those men are preaching that doctrine still. The unfortunate thing is that like the mustard seed in the parable only too small a proportion of the ears that listen and the eyes that read, either hear or see the necessity for following that advice.

Now there are in the United States approximately 160,000 physicians, something like 140,000 are engaged in the active practice of medicine, of this latter number 112,000 belong to county, state and medical organizations, or something less than one-tenth of one per cent. of the estimated national population of 130,000,000 men, women and children. That this comparatively small standing army working under the flag of public health and welfare has succeeded in giving the United States the ranking health rate of the world is the best

defense of the methods by which this record has been achieved. To destroy these methods, or to set them aside even temporarily is a distressful consideration, and akin to the folly of a general, who in the midst of a battle, would suddenly dismiss his trained troops and substitute groups of interested by-standers, eager to see and to feel the so-called "thrill" of combat, but unversed in the tactics of war.

In simple words that is what has happened to the medical profession. And while it is not moot for an editor in his report to disagree too greatly over the news events of the year, this small deviation may be condoned since it is the crux of the campaign that the ILLINOIS MEDICAL JOURNAL must continue to fight through its columns.

Incursions into many private businesses by federal interference have continued to prolong and to expand the economic depression of the last ten years. This year's beginning finds that the tricks of government meddling played with business generally have at last had their effect upon the Journal and other medical publications.

The scientific and technical contents of the Journal have maintained their high standing. The quality of the editorial scientific matter submitted by contributors is of outstanding merit, much of it challenges the articles published in the greatest international journals of the profession. As usual, medicine has done its part for medicine.

The *Journal of The American Medical Association* fights the same fight of rebellion against the lay thumb and the political fist that we fight. It is spurred on more by the fact that the *American Medical Association* was indicted as a violator of the *Sherman Anti-Trust law*. That more than anything else opened the eyes of a great number of physicians, who had thought previously that when we spoke about the menace of over-centralization at Washington, and the tragedy of federal control at Washington, that we were, to put it bluntly, and colloquially, indulging in the mid-Victorian pastime of day dreaming.

Even the hospitals—the most of which institutions are invariably on the wrong side of the ledger—and not too particular as to whence comes the ever-needed maintenance funds—are awakening to the fact that Federal Aid, lay interference and bureaucratic control are too big a price to pay in return for what they get.

The department of medical economics incorporated in the ILLINOIS MEDICAL JOURNAL and ably conducted by its department editors is a splendid source of dispensing facts to the general practitioner, to the surgeon and to the specialist. These all, in the correct analysis are one and the same flesh when it comes to being meat for the destructive theorist.

The ILLINOIS MEDICAL JOURNAL has felt that when it exposed the menace over the profession that its task was only partly done. Unused knowledge is like a diagnosis merely made or an x-ray plate taken, and then the patient dismissed with nothing more being done about it. So side by side with its crusade against lay dictation and federal control and over-centralization of authority the ILLINOIS MEDICAL JOURNAL has fought

and begged and urged a professional organization that will work as vigorously to stamp out this present curse of socialization and bureaucracy as it has worked in the past through numberless epidemics of smallpox, typhus, typhoid, diphtheria and yellow fever. If the medical profession can organize to fight as it is doing now, and that unremittingly the plague of cancer, syphilis, tuberculosis and heart disease, spurred on by remembrance of its conquests of infantile dysenteries, high maternal death rate and typhoid fever, why can it not combine to destroy this insidious enemy, the most malignant germ with which the medical profession has come in contact, that active malicious intention of lay theorists and ignorant meddlers to destroy the entire structure and efficiency of medical practice? There is not on record a single instance where government usurpation of private rights in private business has resulted in anything but legalized sabotage. As only a single example regard what government control of the railroads during the war did to the national transportation system. Some of them were theorized completely out of existence.

If the busy, too often overworked physicians in Illinois who receive the Journal were in the habit of reading their periodical we are sure the shock troops of our organization would be in the process of formation on every corner. The educated laity would be pressed in to fight with us. It is because we know that only too often the Journal is laid aside to be read later that the *urgency of the emergency* has slipped through and beyond the mind's eye of many a physician. And that is why in this report at the present moment on the brink of an ever widening abyss of chaos there seems to your editor to be nothing more important, nor more vital, than to reiterate the warning made so many times in years gone by, that the "price of liberty is eternal vigilance," and eternal warfare. We must unite and we must make that union tell. None of us is any "too good for politics" if it comes down to brass tacks, and since politics and politics alone,—not science nor sincere humanity—is behind this onslaught on medicine, let us remember Hahnemann's adjuration that "The hair of the dog cures the bite," and in "fighting fire with fire" look to the ballot box.

Your editor thanks you for your loyalty to him through the years. He stands firm in the belief that early, clean Americanism will prevail in this, the greatest country in the world, if we, the descendants or the beneficiaries of those pioneers will get out and use the same weapons and the same implements to preserve true Americanism that they did to obtain it.

There can be but one master in the house of medicine and that is the doctor himself.

Respectfully submitted,

Charles J. Whalen, M. D.,
Editor, Illinois Medical Journal.

REPORT OF PUBLIC RELATIONS COMMITTEE

To the Members of The House of Delegates:

The Committee on Public Relations has had a quiet year since the last annual report was presented at the

1938 meeting. The principal duties of the Committee have been pertaining to the adjustment of legitimate claims against insurance companies for the care of injured employees. Since the Committee was formed for this purpose, we have contacted a number of Accident Insurance Companies and our relations have been quite harmonious.

We believe that most of these companies now realize that all just claims must be paid for care to injured insured employees, and it is no longer possible for them to tell the doctor how much he shall receive when his just bill is rendered.

The Courts have ruled in this State that when physicians render bills for care to injured employees, the bill, if in conformity to the fee schedule of that particular community, is a just bill and must be paid.

During recent years we have attempted to show various Insurance Companies that standard fee schedules for the community must prevail in these cases and have succeeded in getting many bills paid in full.

When any member of the Illinois State Medical Society has trouble in getting payment in full for services rendered to Companies carrying insurance, and his fees were in accordance with the fee schedule of the community, our Committee will gladly do everything possible in assisting the member to get the settlement to which he is entitled.

An itemized account of the charges made in each case, with a statement from the County Medical Society secretary that the bill is just and conforms to the usual rates for that type of service within the county, should be sent to the Chairman of this Committee, and we will render all possible assistance.

If the House of Delegates desires additional information regarding any of our activities, we will gladly submit same. If it is desirable to give additional duties to this Committee, we will be most happy to enlarge our services to members.

Respectfully submitted,

W. S. Bougher, M. D., Chairman,
Fred H. Muller, M. D.,
S. H. Lane, M. D.,*

Public Relations Committee.

*Deceased.

REPORT OF MEDICO-LEGAL COMMITTEE To the Members of The House of Delegates:

During the year May 1, 1938 to May 1, 1939 fifty-four personal interviews have been had by the members of this Committee with physicians and surgeons either sued or threatened to be sued for malpractice. Naturally numerous telephone conversations have been had concerning medico-legal matters.

There have been reported to the Committee during that period of time seven suits for malpractice together with nine threatened suits. Of the reported suits, four have been for alleged negligence following treatment of fractures. One suit resulted from an electric shock sustained by a patient who came in contact with certain portions of an x-ray machine. One was instituted because of an alleged slough following intravenous in-

jections, and one suit was started for alleged negligence when a needle broke during the performance of a lumbar puncture.

The Committee has been informed that some malpractice suits have been instituted where members did not notify the Committee but from an investigation it is believed that the total number of such suits started during the present year is somewhat smaller than in previous years.

All claims coming to the attention of this Committee have been investigated, letters have been written, and contacts made with the responsible persons connected therewith in an effort to present both sides of the controversy to the ones involved so that a better understanding might be arrived at in these matters.

Inquiries have been made to the Committee by members of the Society and all have been answered except in cases where in the judgment of the Committee it was deemed best to refer them to the Counsel of the Medical Society for legal opinions.

Much time has been spent by the members of this Committee in studying the merits of malpractice claims, and this, of necessity, included the attendance in court at trials where such cases were being conducted.

In order that more research of this nature might be done in this field, it is important that all members report claims made or suits brought against them, and although we appreciate the fact that this has not been universally done, it is to be hoped that the members will in the future comply with such request because it will put the Committee in a position to know just what claims are being filed so that they may be avoided in the future.

Respectfully submitted,
J. R. Ballinger, M. D., Chairman,
R. O. Hawthorne, M. D., Secretary,
Oscar Hawkinson, M. D.,
C. U. Collins, M. D.,
Arthur Geiger, M. D.,
Walter Wilhelmj, M. D.,
Medico-Legal Committee.

REPORT OF LEGISLATIVE COMMITTEE

To the Members of The House of Delegates:

Legislative thought at Washington as well as at Springfield and in the capitols of various other states appears to be in a curious stage of transition. A strong conservative trend with respect to economics has developed against an equally strong current of thought favorable toward the maintenance and even the expansion of governmental services and functions that will inevitably involve large expenditures. This is particularly true concerning medical matters and public health.

In Congress, for instance, an attempt was made by a sub-committee to set the Federal appropriation for the specific purpose of controlling venereal diseases at \$3,000,000 for the fiscal year beginning July 1, 1939, the same as for the preceding year. The law enacted in 1938 under which this appropriation is made, called for \$3,000,000 the first year, \$5,000,000 the second (begin-

ning July 1, 1939), \$7,000,000 for the third year and indeterminate sums annually thereafter. Pressure exerted by proponents of this legislation, succeeded in bringing the Committee recommendation up to the \$5,000,000 specified in the law. Thus the trend toward lower government expenditures was defeated in this instance, demonstrating uncertainty and lack of determination in the minds of legislators.

Furthermore, there is before Congress the Wagner Bill which would appropriate \$98,250,000 for inaugurating the so-called National Health Program, involving a considerable expansion of public health services and the establishment of a system of medical care, hospital construction and insurance against income loss by wage earners on account of illness. This Bill might easily be passed by acclamation if the money could be found. If the Bill fails, the reason will be more economic than opposition to the principles involved.

Another general trend relates to efforts at controlling the venereal diseases through amendments to the marriage laws. Several states, including Illinois, enacted laws heretofore requiring medical examinations as a prerequisite to the issuance of marriage licenses and similar proposals are pending in other states. The same situation prevails in respect to requiring blood tests for syphilis of pregnant women. While all to the good in purpose much of this type of legislation appears to have been hasty and ill considered and all of it involves considerable expense.

At Springfield, a larger number of bills relating to medical and public health matters have been introduced in the General Assembly this year than ever before at a single session and more are to come. These proposals project along three general lines, (1) the liberalization of registration laws concerning medical practice, (2) the expansion of public health services and (3) the expansion of compulsory laboratory tests.

Of outstanding immediate importance to the medical profession are the several bills on registration. Proposals have been introduced which would set up independent systems of registration for osteopaths, chiropractors and naprapaths. With a general feeling in the General Assembly of sympathy toward these practitioners who have painted themselves as useful but much abused citizens, all three groups have taken full advantage of the situation.

The osteopaths made the most aggressive fight of their history for the enactment of their law H. B. 293. Two special hearings by the Committee on Efficiency and Economy was granted to the osteopaths, the first on Tuesday evening, March 21. The best talent that could be mustered was heard, including President MacBain of the Chicago College of Osteopathy and Edward A. Hayes, former national commander of the American Legion and legal representative of the osteopaths. The Committee was undoubtedly impressed with the presentation.

On Tuesday, March 28, the opponents of the Bill were heard by the Committee. After a vigorous fight by the representative of the Illinois State Medical So-

ciety, the Committee voted overwhelmingly against passage of the bill.

The very fact that the Committee gave two full periods to a hearing on this Bill demonstrates the considerable volume of interest in and the uncertainty of attitude toward this type of legislation. It emphasizes the great and constant need of popular education on the science of medicine and the need for the best possible training of physicians.

At this writing the Osteopathic Bill is still pending in the House where an attempt may be made to overrule the Committee recommendation and pass it anyway. The Bills on chiropractic, naprapathy, chiropody, optometry, etc., are likewise still pending.

A long list of other proposals of more or less interest to medicine are pending. Among these are bills that would require the periodic medical examination of food handlers, the taking of blood tests of pregnant women, more severe fines for violating the narcotic control law, the establishment of a cancer diagnostic service by the State Department of Public Health, the establishment of a State tuberculosis sanitarium, etc. Another Bill provides for liens in favor of physicians, hospitals and dentists for services rendered to injured persons upon claims allowed because of the injury.

A total of seven hundred bills have been introduced so far in the General Assembly and the session is only half over. It is the responsibility of your Legislative Committee to carefully read each of these proposed measures in the interest of the Medical Society. The task is becoming increasingly complicated at each session. In general the legislative situation appears to be going through a stage of transition with a strong tendency toward expanding public services of a medical and public health nature. As never before there is a need for clear thinking and vision on the part of the medical profession if developments are to be guided along lines that are sound from a scientific, social and economic point of view.

J. R. Neal, M. D., Chairman,
M. J. Hubeny, M. D.,
Mather Pfeifferberger, M. D.,
Legislative Committee.

REPORT OF MEDICAL EDUCATION AND HOSPITALS COMMITTEE

To the Members of The House of Delegates:

In its 1938 report your committee discussed undergraduate and graduate education in Illinois. Conditions in 1939 remain much as they were in 1938 though complicated by the dropping of the Cook County Hospital from the list of hospitals approved by the American Medical Association for interne training. As this hospital is still approved by the Department of Education and Registration of this state, this may put those serving as internes in that hospital in the same plight as are the graduates of the Chicago Medical School, eligible for licensure only in Illinois. It is too bad that personalities have been permitted to interfere with correction of the situation at the Cook County Hospital; that the Board of Commissioners of the County of Cook, by canceling their contract with the Cook

County School of Nursing, have complicated the problem which they should be making every effort to solve.

But there are other hospital problems in Illinois. Some of these have become more urgent in view of the National Health Program of the Interdepartmental Committee to Coordinate Health and Welfare Activities. This program recommends the expansion of public health and maternal and child health services. The situation in Illinois with no provision for anything but state and local health departments, with no provision for county health departments plus the fact that supervision of maternal and child health services is in part under the State Department of Public Health and in part under the States Department of Public Welfare make the development of a well coordinated program more difficult. The intensive programs advocated in connection with tuberculosis, venereal diseases, pneumonia, cancer, malaria, mental and industrial hygiene would similarly come to a greater or lesser extent under both of these departments. The state hospitals for the insane, schools for the deaf and blind, hospitals for epileptics and the Research and Educational Hospital are under the Department of Public Welfare which has a layman as Director. This department now has the licensing of maternity hospitals and maternity departments of general hospitals. There is before this legislature a bill to provide a state tuberculosis hospital in Southern Illinois to be under the management of the Department of Public Welfare. A study of the exhibit of the Illinois State Planning Commission in the Hall of Health will show the need for a tuberculosis hospital in that region and also that the area would be unable to build and support it under the Glacken Law, that it must have state support.

It has even been suggested that all municipal, township, and county hospitals be taken over by the Department of Public Welfare.

In addition to the management of such institutions and projects as have been mentioned this Department also participates in the relief program, in providing food, shelter and clothing and medical care for those on relief or on old age and mothers' pensions. That is most of the medical services, institutional and outpatient furnished by the state for the care of the sick, poor and the handicapped are now under the Department of Public Welfare.

The Department of Public Health confines its activities more especially to sanitation, water, milk and food inspection, industrial hygiene and plant inspection, and the supplying of diagnostic laboratory services and certain sera, vaccines and drugs to be used by private practitioners in the prevention, diagnosis and treatment of disease. The lack of county health departments has made necessary the development of branch laboratories in various parts of the State.

It would seem that the Department of Public Health of the State of Illinois has confined its activities to the field approved by the House of Delegates of the American Medical Association at its special meeting in Chicago in 1938. The management of institutions for the care of the sick and other medical activities of the State come under Lay control in the Department of

Public Welfare. Reports made by Committees of the Institute of Medicine of Chicago indicate that the general medical care given to inmates of state penal institutions and hospitals for the insane should be improved.

The recommendation of the National Health Program with respect to expansion of hospital facilities must be considered also in this connection. In Illinois such additions might be to municipal, county and state institutions or in the erection of new institutions under such auspices. Some additional general hospital beds may be needed in parts of the State but would not a program that added them to pre-existing "not for profit" institutions be preferable in many instances to the organization of a new public hospital? Might not the needs of some of these communities be cared for by the subsidizing of beds in existing institutions?

In addition to the tuberculosis hospital in Southern Illinois, some 1,500 more beds are needed in Cook County especially for the care of negroes and Mexicans, both of whom have a great deal of tuberculosis. New maternity and contagious pavilions are proposed at the Cook County Hospitals and also a County Convalescent Hospital. Provision of institutional care for convalescents and for those with chronic diseases other than tuberculosis is now almost non-existent in this State. Many beds may be required for such patients. Studies should be undertaken by county societies to determine their needs with respect to such services. In Cook County a special committee of the Chicago Medical Society is now studying the situation, that it may prepare a comprehensive plan for medical care, in-patient and out-patient, for the medically indigent with coordination of services now rendered by city, county, state, philanthropic, hospital and educational facilities as may be needed.

The division of responsibility for the direction of medical activities in Illinois between the Departments of Public Health under medical direction and of Public Welfare under lay direction have been mentioned. The absence of County Health Departments and its effect on the activities of the State Department of Health have been called to your attention; also the problems arising in Cook County due to the division of responsibility for and support of various medical facilities between the City of Chicago (tuberculosis and contagious hospitals, medical relief in the city) and the County of Cook (general hospital, etc.). Most of the time during recent years the city and county authorities have not co-operated with the medical profession of the County, in fact have ignored it.

No solution of these problems arising from division of responsibility for medical facilities between various departments of the State of Illinois, between local, county and state authorities and the absence of provision for county health departments is offered. It seems, however, that if such facilities are to be operated most effectively in the public interest, they should be under medical supervision. Furthermore, if funds become available for expansion of hospital facilities and for diagnostic centers, the Illinois State Medical Society and its component county societies should be in a position

to see that such facilities are located only where they are really needed and not as political favors.

The Illinois State Medical Society should, then, determine the needs for hospital and diagnostic facilities, whether such facilities should be under a medically managed or a lay directed Department of Welfare, State, County or local, under a medically directed Department of Health and Welfare or Department of Public Health. Furthermore, it, in cooperation with the Director of the State Department of Public Health, should develop plans for coordinating preventive medical work through county health departments, which might make unnecessary some of the local health departments and branches of the State Department.

The Report of Committee on Costs of Medical Care, the program adopted by the American Public Health Association in 1938, the National Health Program and the current literature, popular and professional all make it clear that sociologists, social workers and public health officers who have been unable, without compulsion, to foist their program of impersonal practice of medicine on the public, are working zealously to put it over by compulsory legislation. Instead of proposing a cure-all for diseases as have other cultists, they are proposing a cure-all for the rendering of medical service which will leave to the doctor of medicine only the practice of the science of medicine. He may only diagnose and treat the disease and not the patient that has the disease.

If the medical profession is to continue to render proper medical service, it must be in a position to intelligently direct and plan, must know what additional facilities are needed, where they should be located, and by whom they should be managed. It must no longer be satisfied with opposing unsound proposals but must assume the offensive and make sound proposals for the improvement of all types of medical service, preventive, diagnostic, therapeutic, in-patient and out-patient. Let us no longer "pass the buck" but instead work aggressively for the development not of a program but of progress suited to the needs of the individual metropolitan, urban, or rural communities of all parts of the state and nation.

Respectfully submitted,

N. S. Davis, III., M. D., Chairman,

W. R. Marshall, M. D.,

H. O. Munson, M. D.,

Medical Education and Hospitals Committee.

REPORT OF ETHICAL RELATIONS COMMITTEE

To the Members of The House of Delegates:

The principal activity of this Committee during the past year was the formulation and composition of a code of discipline for the trial of accused members of the Society.

In this work the Committee was ably assisted by the Secretary and furnished with expert advice from Doctor George E. Follansbee, Chairman of the Judicial Council of the American Medical Association. This material was turned over to the Committee on Consti-

tution and By-Laws to be incorporated in the new revision as the Chapter on Discipline where it now appears.

Respectfully submitted,

Charles B. Reed, M. D., Chairman,

Philip H. Kreuscher, M. D.,

Charles S. Skaggs, M. D.,

L. E. Day, M. D.,

Ethical Relations Committee.

REPORT OF CONSTITUTION AND BY-LAWS COMMITTEE

To the Members of The House of Delegates:

During the past year another revision of the Constitution and By-Laws was carried out. In this project the Committee was greatly aided by the wisdom and experience of the Secretary and by valuable suggestions from Doctor George E. Follansbee of the Judicial Council of the American Medical Association.

The text was clarified, new material passed upon by the House of Delegates added, and the text enlarged by an entirely new chapter on Discipline which was courteously supplied by the Ethical Relations Committee.

It is the belief of your Committee that the booklet as it now stands is a satisfactory and complete expression of the purposes of the Society and of its current methods of management.

During this period also, the Committee composed a small model of a constitution and by-laws for the use of County Societies. This booklet will probably be adequate for many of the less settled counties for several years, but as the societies in these counties increase in numbers many changes and additions will be required. The model is flexible and can be expanded at will so long as the changes conform to the regulations of the parent society and do not violate the principles of medical ethics.

Respectfully submitted,

Charles B. Reed, M. D., Chairman,

E. H. Weld, M. D.,

Rollo K. Packard, M. D.,

Committee on Constitution and By-Laws.

REPORT OF EDUCATIONAL COMMITTEE

To the Members of The House of Delegates:

The Educational Committee is organized to carry out two of the great purposes of the Society as given in Article II of the Constitution, namely—"to extend medical knowledge and advance medical science * * * to enlighten and direct public opinion in regard to the great problems of state medicine."

Definite proof that the Committee is filling its responsibility is the fact that during the last twelve months, EIGHT HUNDRED AND THIRTY-TWO speaking appointments were arranged by the committee. These appointments represent FOUR HUNDRED AND NINETY-EIGHT lay groups and THREE HUNDRED AND THIRTY-FOUR scientific meetings.

SPEAKERS' BUREAU

498—Programs were arranged for lay audiences. Although the Committee endeavored to secure a minimum audience of 50 for its speakers, this was not always possible. There were some church and school meetings which were attended by 1,000 to 2,000 people.

The work of the Committee divides itself into certain definite fields of activity and for the purpose of clarity, this annual report will be classified to correspond to these fields.

The Committee worked with the Chicago Community Forum Service in securing speakers to talk about the dangers of state medicine in forums where the opposition was also presented.

Cooperation was given to all types of organized groups in securing appropriate programs according to their special interests.

The subject of socialized medicine has been requested as often as any other topic. The difficulty is not in securing speakers to discuss the subject, but in urging them to be emphatic in their statements concerning organized medicine's stand on this important topic. The public expects the doctors to stand up for their rights and they are disappointed if in these discussions medicine's point of view is not strengthened.

Speakers were scheduled for the annual meetings of the Illinois Congress of Parents and Teachers and the Illinois Federation of Women's Clubs and for laity day meetings of the Woman's Auxiliary.

RADIO PROGRAMS

192—Radio programs were given under the auspices of the Committee over Chicago stations. The programs over WGN are on a nation-wide hook-up and as a result letters commenting on the talks were received from listeners from all over the United States.

The Committee endeavored to have a variety of presentations consisting of straight talks, round table discussions and dialogues. The subjects were of seasonal interest. During the summer months some excellent programs on HAY FEVER were given by members of the Chicago Allergy Society.

Copies of the radio schedules were furnished libraries of the state and to interested groups.

The Committee supplied copies of its radio talks to SEVEN Illinois cities for local use.

A series of health programs in Lithuanian was inaugurated over one of the stations sponsoring foreign programs. The talks were prepared by the Educational Committee, translated into Lithuanian and given by the members of the Lithuanian Medical Society.

EXHIBITS

An exhibit was prepared for the Annual Meeting of the Illinois State Nurses Association at Chicago, in October.

The Educational Committee was invited to present its exhibit on lay health education at the Annual Meeting of the American Medical Association in San Francisco, June 1938. The exhibit was very favorably received.

An exhibit was set up for the Annual Meeting of

the American Dental Association at St. Louis, in October, 1938.

The Committee prepared an exhibit for the Mid-winter Meeting of the Chicago Dental Society which was attended by more than 10,000 persons.

Material for exhibit purposes was furnished Monmouth and Moline, Illinois in connection with health weeks.

Material was furnished the Mid-West Physical Education Association meeting in Indianapolis.

An exhibit was prepared for the National Recreation Congress at the Hotel Sherman, Chicago.

The exhibit window in the Marshall Field & Co. Annex Building has been changed monthly. This window continues to attract considerable attention from the thousands of people passing through the corridors of that building.

One of the most outstanding window displays was on Hay Fever. Material was furnished by Dr. Harry L. Huber of the Chicago Allergy Society and Mr. Durham of the Abbott Laboratories. During the hay fever period the pollen count was given to the Chicago newspapers and special articles were released to the newspapers of the state.

Another interesting and spectacular window was on bronchoscopy with material furnished by Dr. Paul H. Holinger and the University of Illinois College of Medicine.

The third outstanding window was on Hobbies and Health with a great variety of hobbies of Chicago physicians on display, including books, photography, stamp collection, coins, bird's eggs, bird banding.

MATERNAL WELFARE

The Committee cooperated with the Child Hygiene Division of the State Department of Public Health and with the Maternal Welfare Committee of the Illinois State Medical Society.

Special obstetric and pediatric programs were arranged for county medical societies. The Committee was relieved of a great amount of detail work in connection with the sending of notices to doctors and releases to newspapers by the new office set up for the Child Hygiene Division at 30 North Michigan.

Special publicity was given to the Postgraduate one week courses offered at the University of Illinois.

Special educational articles on the importance of maternal and prenatal care were released through regular channels.

Speakers were scheduled to address lay meetings sponsored by local county medical societies.

Special contacts were made with leaders of Parent Teacher Associations and chairmen of health committees of Women's Clubs in announcing these lay meetings.

The Committee's articles were mimeographed and sent to the public Maternal Welfare meetings for distribution.

Assistance was given in arranging Councilor District Maternal Welfare programs and wide publicity was given these programs. Literally thousands of notices were sent to doctors urging them to attend these meetings.

The pamphlet on Importance of Pre-Natal Care prepared by the Maternal Welfare Committee was sent to suitable audiences for distribution.

PUBLIC LIBRARIES

119—Libraries.

114—Hospitals are on the mailing list to receive the material distributed by the Committee. The Editorial Style article prepared in the office of the Committee is released every two weeks to these libraries and to hospitals and occasionally special material is sent, for example the following articles were released:

"Lawyer Looks at Socialized Medicine."

Dr. Neal's article, "Socialization of Medicine."

"A Doctor Looks at Socialized Medicine."

Dr. Packard's President's Address.

Two reprints of articles by Dr. Fishbein.

One reprint of article by Dr. Leland.

PACKAGE LIBRARIES

The popular package library service was in constant demand. Many doctors used this service. Special material on socialized medicine was furnished high school and college students. When the Committee was not able to fill the requests, the American Medical Association Librarian was called upon and excellent service rendered.

MOTION PICTURES

The Committee continues to refer all calls for motion picture films to the State Department of Public Health where prompt and courteous service is always received and requests granted if at all possible.

LAY ORGANIZATIONS

Special material outlining services rendered by the Educational Committee and available to women's clubs was prepared for the Public Health Chairman of the Illinois Federation of Women's Clubs. Programs were suggested to this Chairman for her Chicago meetings.

Letters offering to furnish the services of the Speakers' Bureau, were sent to lay organizations.

Popular health topics for the "Handbook of the Chicago Community Forum Service" were suggested.

Special health articles were prepared for District Meetings of the Illinois Congress of Parents and Teachers.

Participated in a health program at the Chicago Woman's Club.

Request was received from the Superintendent of a city school, downstate, that Committee furnish all pupils in health classes with copies of its health education material.

Programs suitable for Lions Clubs were suggested to District Governors of the Lions International.

Conference held with Advisor of Harrison Technical High School concerning programs for freshmen and sophomore students.

Conference held with representative of Chicago Board of Education regarding proposed courses to be offered in Junior Colleges.

Material prepared for the annual year book of the Chicago Council of Social Agencies.

Material prepared for the Adult Education Council of Chicago.

Special assistance was given to Summer Round-Up Chairman of the Illinois Congress of Parents and Teachers and to its Health Chairman.

Furnished periodic health examination blanks to the Home Bureau units of the state.

Cooperated with the National Youth Administration, the WPA, the American Red Cross, the Home Bureaus, Y. W. C. A.'s and Y. M. C. A.'s in health programs and with educational health literature.

Promoted Youth Week, Health Week, Mother's Day, Child Health Day.

MAILING LIST

41,069—Copies of medical literature were sent to those on our mailing list which included libraries and individuals. The addressograph purchased by the Committee last summer made possible this stupendous figure.

Almost daily the Committee received a request from a nurse, a health chairman, or a program chairman for copies of our literature which is evidently filling a definite need.

NEWSPAPERS

68—Health articles were written and approved by the Committee.

15,688—Articles were released to Illinois newspapers—3,809 of these were announcements of medical meetings and the remaining 11,879 were health education releases.

Daily, weekly and monthly releases were offered newspapers, with the majority of them carrying a weekly article over the signature of the local society or Illinois State Medical Society.

Editors were cooperative and evidently were glad to use the material which usually appeared in a prominent place in the papers. Some editors requested information on certain bills introduced in the legislature which concerned the practice of medicine in the state. These were referred to the Legislative Committee for reply.

SERVICE TO COUNTY MEDICAL SOCIETIES

The report of the Scientific Service Committee appears in this Handbook. The work of that Committee is done in the office of the Educational Committee and is entirely financed through the appropriation to that committee.

334—Programs were scheduled for county medical societies of the state, a substantial increase over the last twelve months.

It is interesting to note the great variety of programs which were arranged for county medical societies. Clinical Conferences were requested, clinics where doctors brought their patients, and roundtable programs where local physicians conducted the discussions.

15,149—Notices were prepared by the Committee for county medical society meetings. The Committee felt that in scheduling speakers for county societies, it should make every effort to secure a good audience, therefore notices have been prepared and mailed for

many societies using speakers from the Scientific Service Committee.

The Committee assisted with publicity for the public lectures sponsored by the Chicago Medical Society.

The Committee cooperated with the Pneumonia Control Committee of the State and sent letters to county societies to introduce the programs, and speakers were scheduled to talk on pneumonia.

Cooperated with the Cancer Committee of the Society by furnishing speakers on cancer and in having special cancer programs given over the radio during the month of April.

SUMMARY

Realizing that the problems of medicine are also problems which concern the public, the Committee has seized upon every opportunity to discuss them before lay groups. The public desires to know how organized medicine feels about these problems. It is because of the splendid cooperation given by hundreds of Illinois physicians that this type of program is made possible.

The Committee has been fortunate in its contacts with the public and has received aid from the American Medical Association upon many occasions. Dr. W. W. Bauer and Dr. Thomas G. Hull have been particularly helpful in assisting with speaking appointments and with exhibit material.

The Committee has kept within its budget although when one compares the amount of work accomplished with previous years, one will notice a very definite growth of activities.

There are still methods to be tried and new fields to explore and the Committee is always open to suggestion from the seven thousand and more members of the Illinois State Medical Society who support this work.

Respectfully submitted,

Jean McArthur, Secretary.

R. R. Ferguson, M. D., Chairman,

James H. Hutton, M. D., Vice Chairman,

Charles P. Blair, M. D.,

C. G. Farnum, M. D.,

Otis O. Stanley, M. D.

Educational Committee.

REPORT OF SCIENTIFIC SERVICE COMMITTEE

1938-1939

To the Members of the House of Delegates:

Once again it becomes our privilege to report to the House of Delegates upon the activities of the Scientific Service Committee.

The past year has proven unusually active, and from the Committee's viewpoint, a successful one. The prime purpose of the Scientific Service Committee is the servicing of the 90 component county medical societies. This service consists in providing speakers, lectures, scientific programs, and clinics of a wide variety. It also includes the mailing of notices concerning county

society meetings, and newspaper publicity in advance of meetings.

During the course of the past year, this Committee contacted all the secretaries and presidents of the county societies in regard to broadening the scope of the Committee. It was suggested to the county secretaries that the Scientific Service Committee was ready to arrange a series of from three to six monthly programs, covering subjects of their own choosing, and conducted by speakers whom they might elect. It was suggested that such planned programs might include subjects with a seasonal interest, so that for example, the topic "Pneumonia" might be presented during the late winter months. The Committee furthermore offered to the county secretaries clinics of various types—such as orthopedic, cardiac, etc. Finally as an innovation, the Committee advised the county societies of its intention to organize "Clinical Conferences" to function as follows: Upon request of county societies, the Scientific Service Committee is prepared to send one or more speakers to a given society to conduct a conference, or informal "Round Table Discussion" of a selected subject, the county society secretary or the program committee to select a group of local members to carry on the discussion with the guest speaker. This type of program has proven successful in other state and national society meetings.

The response to these suggestions was very encouraging as the appended list of individual county societies serviced will attest. However, an appeal is herewith made directly to the Secretaries of all of our county societies to make a fuller and wider use of all services of this Committee. It is our desire to service ALL of our county societies at least once during a current year, and preferably more often.

To further broaden the scope of the Scientific Service Committee, we have just completed a new, and increased speakers list, a copy of which will be mailed to each county secretary. This list contains many new names, both from the roster of the teaching institutions of our larger cities and also from members of our widely scattered county societies. It also contains a revised list of subjects covering the widest possible range.

The Scientific Service Committee has in the past year cooperated actively with the various State Committees engaged in a similar field of endeavor, particularly the Advisory Committee on Maternal and Child Hygiene (Dr. F. H. Falls, Chairman) and the Pneumonia Control Committee.

In conclusion, the Scientific Service Committee wishes to thank the officers of the county societies for their splendid cooperation and we ask for their continued support.

Respectfully submitted,

Robert S. Berghoff, M. D., Chairman,
R. K. Packard, M. D.,
F. H. Falls, M. D.,
H. N. Rafferty, M. D.,
Walter Stevenson, M. D.,
R. L. Green, M. D.

Scientific Service Committee.

FOLLOWING GROUPS USED SPEAKERS FROM SCIENTIFIC SERVICE COMMITTEE

Aurora Medical Society	Litchfield Hospital
St. Joseph's Hosp., Aurora	Macoupin County
Beardstown Hospital	Madison County
Bond County Med. Society	Marion County
Bureau County	Monroe County
Carroll County	Montgomery County
Champaign County	Morgan County
Christian County	McDonough County
Clinton County	McHenry County
Coles-Cumberland County	Ogle County
DeWitt County	Peoria County
Douglas County	Perry County
DuPage County	Pope County
Effingham County	Randolph County
Ford County	Rock Island County
Franklin County	Saline County
Fulton County	Sangamon County
Greene County	Schuyler County
Hancock County	Shelby County
Henry County	St. Clair County
Herrin	Stephenson County
Iroquois County	Union County
Jackson County	Vermilion County
Jersey County	Wabash County
Jefferson-Hamilton County	Warren County
Jo Daviess County	Wayne County
Kane County	Whiteside County
Kankakee County	Will-Grundy County
Knox County	Williamson County
Lake County	Winnebago County
LaSalle County	Tri-County Medical Society
Lee County	
Iowa, Illinois Central District Medical Association.	
Southern. Ill. Med Society	6th Councilor District
Scott County, Iowa	7th Councilor District
1st Councilor District	8th Councilor District
2nd Councilor District	9th Councilor District
5th Councilor District	10th Councilor District

A total of 74 Groups.

PROGRAMS ITEMIZED AS TO SPECIALTIES

Allergy	8
Dermatology and Syphilology.....	3
Economics, Organization, Legal.....	40
Endocrinology	8
Eye, Ear, Nose and Throat.....	3
Gastro-Intestinal	14
Heart	17
Internal Medicine	18
Neurology, Psychiatry	8
Obstetrics and Gynecology.....	101
Orthopedics	8
Pediatrics	37
Physical Therapy	8
Pneumonia	21
Proctology	3
Surgery	10
Tuberculosis	9
Urology	9
X-Ray	3

334

REPORT OF MEDICAL ECONOMICS COMMITTEE

To the Members of the House of Delegates:

The great increase in the interest of the medical profession in this subject as well as the enlargement of the field makes an adequate and complete report of the activities of this committee most difficult. Every new economic problem coming to the attention of the officers of the State Society is referred to this Committee and

some member is presented with the problem for study and report. Many times there is little to be done, and no report is made; while at other times there is much to be done. This, as can be readily seen, takes considerable time of the Committee without any report of the same to be made at this time.

We continue to follow the proposed legislation at Washington with great interest. Through the Health Conference, the special meeting of the House of Delegates of the American Medical Association, and the subsequent meetings of the Special Committee appointed to confer with the Interdepartmental Committee, your Committee has been and still is carefully watching every development as it affects the future of the practice of Medicine. This is reported each month in the Column on Medical Economics of the Illinois Medical Journal presented through the kindness of the Editor, Charles J. Whalen. The Committee would be interested to have an expression from the House of Delegates this year as to the interest and value of this column and whether they wish it continued another year. The work necessary to prepare such a column is much greater than is generally understood and it has been carried on for sufficient time that the members of the Illinois State Society should know whether they wish it continued.

At present the so-called Wagner Bill on Health, presented by Senator Wagner of New York, embodying almost in its entirety the recommendations of the Interdepartmental Committee at the Health Conference held last August, and endorsed by the laity members present over the protests of the medical members attending the conference, appears to be resting comfortably in some committee, with little opportunity to make its escape onto the floor of the Senate this session due to interparty friction and more important other congressional business. However, we must remember that this is one of the planned so-called "Must" bills under the wing of a master strategist. It can make its appearance at any time there is a lull in the family fight and the opportunity seems to present itself for passage, before the opposition is aware of that danger. We should continue to contact our Senators and Congressmen and acquaint them of both the dangers of the bill as well as the opposition of the medical profession. Every man can help in this work.

The members of the Committee have continued the practice of the past few years of making talks on medical economic problems not only to component medical societies throughout the state, but also to lay groups, when requested either directly or through the Educational Committee of the Illinois State Medical Society, which has been of great assistance and most cooperative throughout the past several years. We have all too few members of the Illinois State Medical Society who are prepared and willing to fill engagements to address lay groups. Every Component County Society should have two or three men ready and willing to do this work. Either the Educational Committee or this one will gladly assist any man in getting the data necessary to prepare a talk for such groups.

Care of the indigent continues to be a great problem and it is to be hoped that the special Committee which has been investigating this care both in different counties of Illinois as well as nearby states will have a well thought out constructive plan to offer for adoption throughout the State of Illinois. We hope they have it at this meeting of the House of Delegates.

The Chairman wishes to thank the officers of the Illinois State Medical Society, the members of this Committee, Miss McArthur, and the Editor of the ILLINOIS MEDICAL JOURNAL for their cooperation during the past year. He wishes to particularly thank those members who have written articles for presentation in the Medical Economics Column during the past year. We bespeak for the same cooperation to the new Committee during the coming year.

Respectfully submitted,

E. S. Hamilton, M. D., Chairman,
H. M. Camp, M. D.,
W. H. Hartman, M. D.,
John R. Neal, M. D.,
Ralph P. Peairs, M. D.,
I. H. Neece, M. D.,
R. K. Packard, M. D.,
C. B. Ripley, M. D.,
C. S. Skaggs, M. D.,
C. E. Wilkinson, M. D.,
Medical Economics Committee.

REPORT OF VETERANS' SERVICE COMMITTEE

To the Members of The House of Delegates:

The Veterans' Service Committee has been making the customary contacts with the various veterans' organizations and facilities.

INCREASING INTEREST BY MEDICAL LEGIONAIRES

There is at present a plan being worked out by the Medical Post Department of Illinois whereby closer contact between organized medicine, veterans' organizations, and the veterans' facilities may be established. The plan is to organize more "Medical Posts" throughout the state. Posts of this type in conjunction with the medical commission would have considerable influence in shaping the medical thought of veterans, particularly regarding the right to medical care.

LEGISLATION

There were some legislative affairs that received the interest of the Cook County Council and the Second District, Department of Illinois. The legislation included two Bills, the so-called Bloom Chiropodist Bills, recommending that a Podiatry Corps be created in the army and navy, and that chiropodists be given commissions to rank the same as Medical Officers. These bills were respectively H. R. 9363 for the army and H. R. 9364 for the navy. A resolution endorsing these Bills was introduced and passed in the Cook County Council Department of Illinois. Dr. W. C. Burket, Cook County Surgeon, and members of our Veterans' Service Committee fought valiantly against the passage of the resolution. However, the resolution for endorsement was set aside in National Committee. Letters

from Surgeon General and the Navy to Cook County Surgeon Burkct assured us that the Bills would undoubtedly be defeated.

A similar osteopathic resolution was to be introduced in the second district but was defeated in Committee and never reached the floor.

There has been some evidence that non-service connected and non-indigent vetrans have been admitted to veterans' facilities for treatment. This being true, these vetrans evidently perjured themselves by signing the affidavit of indigency. This matter will have to be taken up for further investigation.

Respectfully submitted,

F. O. Fredrickson, M. D., Chairman,

F. G. Norbury, M. D.,

T. B. Williamson, M. D.,

W. C. Burket, M. D.,

T. B. Knox, M. D.,

R. P. Peairs, M. D.,

Veterans' Service Committee.

REPORT OF SPECIAL COMMITTEE ON INDIGENT MEDICAL CARE

To the Members of The House of Delegates:

The complicated problem of providing medical care for the needy has not been settled and progress toward that end is not altogether optimistic in character. While here and there good practical working agreements seem to have been reached by the officials concerned and the medical profession, a lot of confusion and unrest concerning this matter still prevails.

Of especial interest and perhaps of dominant importance among various developments is a bill now pending in Congress, introduced in February 28, 1939, by Senator Wagner as an amendment to the Social Security Act. This proposal, among other things, would establish a system of free medical care to the medically needy. It would also set up a system of insurance to compensate wage earners for temporary loss of income incurred by reason of illness. For these two purposes the Bill would appropriate for the first year \$35,000,000 and \$10,000,000, respectively.

Under the provisions of the Bill the Federal Government would not participate directly in the rendering of service. Grants-in-aid would be extended to States and the States would be required to appropriate funds equal to those granted.

There seems to be a favorable attitude in Congress to the principles involved in the Bill. The chief obstacle which will hinder passage is the matter of financing the activities contemplated. If sufficient sums can be eliminated from other channels of expense, the WPA for example, to offset the appropriations called for in the medical bill so that the total appropriation by the current session of Congress will not exceed that of the last preceding Congress, the Wagner Bill might be passed.

In the meantime a widespread system of providing medical care for rural people has been developed by the Farm Security Administration, an agency of the Federal Department of Agriculture. That agency sets up revolving funds, as a rule, from which the medical

expenses of families which hold membership therein are paid. Agreements on a contract basis are in most cases established between the medical societies concerned and the administrative agency. These agreements define maximum fees and also the maximum amount that can be spent during a month or year for medical service to all families concerned. The system appears to have been only partly satisfactory but sufficiently so to cause its continuation. An investigation by two journalists, which was reported in the Saturday Evening Post, enumerated numerous abuses on the one hand and benefits on the other. This report suggested that the plan may be expected to operate more advantageously than not during periods of economic stress but with doubtful satisfaction during periods of prosperity.

In an attempt to collect information upon which to construct a practical plan for extending medical care to the needy, the American Medical Association initiated about a year ago, a nation-wide survey of the need and supply of medical care. Progress in this study has not reached the point where conclusions may be drawn and definite plans developed. It appears, however, that there exists a considerable volume of need for medical care among people in the low income classes and that there is some dissatisfaction among these people as well as among physicians in regard to the way in which this need is now met.

Recommendations will doubtless be made by the American Medical Association when the study has progressed far enough to justify a report.

Only recently the undercurrent of unrest concerning medical care for the needy came to the surface in Scott County, Iowa, in which the City of Davenport is located. Claiming that the cost to the county of providing medical care to the needy had jumped from \$40,747 in 1937 to \$80,000 in 1938 under an agreement with the Medical Society, the County board of supervisors came to an open break with the Medical Society over a proposal to establish a venereal disease clinic. The board now threatens to establish a hospital and set up a medical service without any consideration whatever of the local medical society. Without regard to the merits of the situation, it shows clearly the trend of attitude on the part of officials and the public in regard to medical care. "Adequate care has been given to the needy but at a prohibitive cost," declared the Chairman of the County board. "We have reached our present position," he continued, "because the medical society insists upon provision in the contract for the venereal disease clinic which we regard as impossible." Newspaper editorial comment indicated that the public attitude in Scott County is predominantly favorable to the position taken by the County Board. Although somewhat unusual, this event in Iowa illustrates how close to the surface of trouble the problem of medical care is and how quickly it can be made a disturbing local as well as a far reaching issue.

In Illinois there has been organized an agency known as the Citizens' Committee for Adequate Medical Care, with headquarters in Chicago. This agency, representing for the most part Labor and Social Work-

This Committee meets quarterly in Chicago, at which time a general discussion is held and plans drawn up for the following quarter. The meetings are always well attended and much interest manifested. The State Or-

ganization consists of one hundred and thirteen members which includes the district chairman, assistant chairmen, and a county chairman in every county outside of Cook, who must be a member of organized medicine and selected or approved by his local medical society in the county in which he resides. The county chairman is in charge of all activities in his county, including a speakers' bureau of physicians available at all times for talks to lay groups on prenatal care.

When this Committee was appointed in November of 1937 they had little to guide them in their work, and the program had to be developed as the problems presented themselves. The following platform was definitely worked out to guide the county chairmen in the work in their respective communities:

1. More emphasis should be placed in adequate prenatal care.

- a. Monthly visits up to the seventh month, then every two weeks—history—physical examination including pelvic measurements—urinalysis—blood pressure—Kahn—blood count, including red, white and hemoglobin—weight and dietary instructions.

2. Greater attention should be given to eugenics rather than to birth control.

3. Every county medical society should include in its postgraduate instructions for doctors "refresher" courses in obstetrics.

4. The study of maternal, fetal and early infant deaths should be continued to determine preventability, with a committee meeting regularly.

5. A physicians' speakers' service should be organized for lay groups in each county.

6. In each county of the state, a large public meeting should be held to bring to the attention of everyone the need for saving the lives of mothers and babies.

7. Greater emphasis should be placed on the value of a routine Wassermann test for syphilis for every prospective mother immediately after a diagnosis of pregnancy is made.

8. The interest of women should be secured, particularly such groups as the Woman's Auxiliary of the county medical society.

At the first meeting of the State Committee for this year it was agreed to continue the same program through 1938. This program has been carried out in a very satisfactory manner in many communities of the state through the work of the county chairmen and the cooperation of their medical societies. We feel that next year's State Maternal Welfare Committee should revise the county platform to make it more interesting for the county chairmen and their medical societies. Next year we would also like to see a closer cooperation between the county chairman and his local medical society, and especially do we recommend that each county medical society in the state hold at least one meeting next year for the discussion of the maternal welfare program and the ways and means by which it can be made more effective.

This Committee has cooperated with the Educational Committee on all occasions, and we are very grateful to that body for its splendid service in securing speak-

ers for our public lay meetings throughout the state. The recommendation of the Maternal Welfare Committee to the county chairmen for holding public meetings for the laity has been well received. The number of meetings held this year shows a large increase over last, fine attendance in most cases, and much interest manifested by those present.

The Committee agreed at the beginning of the 1938 educational campaign that a district meeting should be held in each district in the state to acquaint the county chairmen with the platform and to arouse interest among the physicians of the district in supporting their county chairmen. These meetings have been well attended and a fine response shown on the part of the physicians throughout the state. The Committee believes that the continuation of the program which last year was approved by the House of Delegates for five years will produce a remarkable reduction in maternal death rate by the end of that time. The results obtained to date have proven very satisfactory. The physicians are doing much better prenatal work, and the public, having become acquainted with the necessity of prenatal care, are demanding it. A bulletin recently issued by the Department of Public Health at Springfield giving the new low maternal death rate at 3.2 for the past eleven months of 1938 is most gratifying to the Committee.

It is true that the mortality and morbidity statistics in Illinois among mothers and infants is quite high in a few counties, and these high rates naturally increase the average for the entire state. The cause of this is obvious as it occurs in those counties with a large colored population, Southern European population, and low income group. We hope to overcome this situation by holding educational programs before N. Y. A. and Rural Educational Groups. The Committee has recently started this work and to date it has met with exceptionally fine response.

The State Maternal Welfare Committee has cooperated with the Governor's Advisory Committee and the Educational Committee in advocating and assisting in "refresher" courses in obstetrics and pediatrics. We feel that this is an outstanding contribution to the medical profession of Illinois and has been gratefully received and deeply appreciated by the physicians in active practice, and we most sincerely recommend that these courses be continued.

The Governor's Advisory Committee has given us Doctors Harold H. Hill and Howard L. Penning who devote most of their time to arranging the clinical conferences which are to be held on obstetrics and pediatrics, and they also have made a number of talks to lay groups on "Pre-Natal Care" for which we are very grateful.

The State Maternal Welfare Committee also sponsors summer post-graduate courses in obstetrics and pediatrics as conducted at the University of Illinois College of Medicine. This is a very outstanding course and should interest every obstetrician and pediatrician in Illinois. Enrollment last year was much higher than in 1937, and we would like to recommend that every physician in Illinois doing obstetrics and pediatrics take

advantage of this splendid opportunity to improve his knowledge of modern technique.

A folder entitled "Advice to Expectant Mothers" was prepared by a sub-committee composed of Doctors Owen of Rockford, O'Neill of Ottawa, and Carey of Joliet. These have been distributed at lay meetings and are an important contribution as they carry the message expectant mothers need to know in a simple language easily understood by the women of the lower bracket.

The Committee on Maternal Welfare of the Illinois State Medical Society will continue to function according to the desires and wishes of the Society so long as the Society believes it advisable, and we desire to assure the members of the House of Delegates that while it was necessary to incur some expense in the building of the State Organization and carrying out the educational campaign on prenatal care, we will reduce to a minimum the future expenses of the Committee, and we are always anxious to receive suggestions or criticisms of a constructive nature which may improve the services we are rendering.

We are happy to report to the House of Delegates a very prosperous year, and we will continue to cooperate with our Government, State Department of Public Health, and the Civic Agencies to the best advantage of organized medicine, and to the citizens of Illinois.

Respectfully submitted,
 T. B. Williamson, M. D., Chairman,
 John F. Carey, M. D., Secretary,
 A. B. Owen, M. D.,
 Jos. T. O'Neill, M. D.,
 Phebe L. Pearsall, M. D.,
 R. R. Loar, M. D.,
 Milton E. Bitter, M. D.,
 Walter D. Murfin, M. D.,
 O. H. Crist, M. D.,
 Henry Horstman, M. D.,
 Fredrick H. Falls, M. D.,
 H. H. Hill, M. D.,
 Committee on Maternal Welfare.

REPORT OF FIFTY YEAR CLUB COMMITTEE

To the Members of the House of Delegates:

In January, 1938, the Council of the Illinois State Medical Society, realizing that many physicians in the state, had been practicing medicine for fifty years or more, and wishing to do them just honor, organized the Fifty Year Club. The Club is a phantom organization, with out officers, dues, or meetings. Those physicians, whether now a member of the society or not, who have been in the practice of medicine for fifty years or more, and are so recommended by their county society, are eligible to membership.

County Societies throughout the state have been holding special meetings to honor these "grand old men of medicine" and the State Society Committee sends a lapel button and a framed certificate of membership, for presentation.

Since the annual meeting last year in Springfield, the following changes in membership have taken place:

Chicago membership May 1, 1938.....	77	
New members	18	
	95	
Died during the past year.....	4	
		91
Downstate membership May 1, 1938.....	119	
New members	17	
	136	
Died during the past year.....	8	128
Total membership May 1, 1939.....	219	

Whenever possible interesting highlights in the early days of medicine in Illinois are collected from these Fifty Year Club Members, and the material is filed with other interesting data in the office of the Secretary of the Illinois State Medical Society.

Respectfully submitted,
 Andy Hall, M. D., Chairman,
 J. S. Templeton, M. D.,
 T. B. Knox, M. D.,
 Fifty Year Club Committee.

REPORT OF SCIENTIFIC EXHIBITS COMMITTEE

To the Members of the House of Delegates:

It was at the meeting in Rockford four years ago that your Committee on Scientific Exhibits first had charge of this work. That year the exhibits occupied the limited space between the ballrooms, a sample room or two on the floor below, the mezzanine and some space in the main lobby. This year the exhibits have increased in quantity, so that the garage (50x100 feet) is completely filled as are the spaces on the mezzanine with overflow into the lobby. Some applications for space from physicians both within the state and from neighboring states had to be declined for lack of space. Most of this year's exhibits either have been or will be shown at the meetings of the American Medical Association.

For the second time the Society is sponsoring a Hall of Health for the education of the public. The Rockford Armory, so admirably suited for such exhibits, as well as their quality will insure a much larger attendance than last year. The participation of many local organizations is especially noteworthy. We wish to express to Dr. Baxter, Mr. Richardson and others in the Department of Health of the State of Illinois our whole-hearted appreciation of their generous help and cooperation for furnishing so extensive an exhibit. We regret that their exhibiting at the Fairs in New York and San Francisco prevented the Department of Public Welfare from exhibiting this year.

It is felt that the essay and poster contests for high school children on "The Family Doctor" will be of great educational value. The winning poster might be used next year in place of the one that has been used to publicize the Hall of Health in and about the city in which the meeting is held.

The various movies to be presented in the school

room on the second floor of the Armory should prove to be a great attraction.

In view of the National Health Program, the exhibit of the Illinois State Planning Commission showing the present situation in this state with respect to hospitals and sanatoria and also the incidence of tuberculosis and other diseases and the purchasing power of various counties is worthy of careful study by all members of the Society.

The Hall of Health Committee of the Society, Miss Jean McArthur, and especially the Committee of the Winnebago County Medical Society and its chairman, Dr. N. O. Gunderson, have made possible this extensive and highly instructive exhibit. The local committee is responsible for the participation by so many Rockford organizations. Dr. Hull, Director of Exhibits of the American Medical Association, has cooperated most generously both in furnishing a fine exhibit in the Hall of Health and in making it possible for us to get many of the scientific exhibits. The employment of a local man to publicize the Hall of Health and promote local interest seems to be a step in the right direction and something that should greatly increase the attendance.

Respectfully submitted,

N. S. Davis, III., M. D.,

Director of Exhibits.

J. S. Templeton, M. D.,

Chairman,

C. F. Harmon, M. D.,

Committee on Scientific Exhibits.

REPORT OF CANCER COMMITTEE

To the Members of the House of Delegates:

I have the honor to present the annual report of your Cancer Committee for the past year. Numerous meetings of that Committee have been held in Chicago during the year and the chairman has had the privilege of appearing before the Council on more than one occasion during that time.

As is the case in other states at present the chief activity of your Committee has centered around the work of the Women's Field Army. We have been fortunate in retaining Mrs. George Hanly Nippert as State Commander of the Women's Field Army in Illinois. A regional conference of officers of the Army from Illinois and surrounding states was held under the auspices of the American Society for the Control of Cancer in Chicago February 14 and 15.

All Illinois councillor districts have been organized and county organizations have been set up for the accomplishment of the purposes of the Army in all councillor districts except the seventh. Sixty-six of one hundred and two counties have been thus organized. There has been a pleasing increase in the cooperation of the medical profession with the women who are conducting this work in Illinois. The newspapers throughout the state have been gracious in giving publicity to the work of the Army. Innumerable local meetings of women's clubs have been held for the purpose of lay education on the subject of cancer. The radio has been extensively used.

Inasmuch as the campaign for enlistment in the Army is now in progress, it is not possible as yet to report on its success.

Literature on cancer from many sources has been widely distributed throughout the state, some of it having been prepared by members of your Committee.

It is felt that much progress has been made in Illinois on the subject of lay education in cancer, which is, of course, the primary object of the Women's Field Army in order to bring cancer patients to the attention of the medical profession in the early, favorable stage of the disease.

Your Committee has approved a cancer bill which has been introduced into the state legislature for the purpose of improving facilities for the care of cancer patients in this state. This bill includes provision for a Division of Cancer Control in the State Health Department. We are informed that it is receiving favorable consideration by the legislature and is practically assured of passage. In this connection appreciative acknowledgment of the cooperation of the chairman of your Legislative Committee, should be made.

Information has come to us concerning a number of additional cancer clinics in the state, principally in Chicago, which are in various stages of formation in an attempt to meet the standard for cancer clinics set by the American College of Surgeons.

An exhibit on cancer for the public has been prepared for the Hall of Health in Rockford at the time of the annual meeting of your Society. For this your Council was good enough to authorize an expenditure in the amount of Two Hundred Dollars, which is the only money of this Society expended by your Committee during the year.

It is a pleasure again to express appreciation of the support of your Council and of the members of the Cancer Committee, which includes Dr. J. P. Simonds, Chicago; Dr. Roswell T. Pettit, Ottawa; Dr. Andy Hall, Mount Vernon; and Dr. Gatewood, Chicago. As always the Educational Committee of your Society has furnished invaluable cooperation to this Committee.

Respectfully submitted,

Bowman C. Crowell, M. D., Chairman,

J. P. Simonds, M. D.,

Gatewood, M. D.,

Roswell T. Pettit, M. D.,

Andy Hall, M. D.,

Committee on Cancer.

REPORT OF SYPHILIS CONTROL COMMITTEE

To the Members of the House of Delegates:

The enclosed reprint, compiled by Herbert E. McDaniels, Ph. D., Coordinating Bacteriologist, Illinois Department of Public Health, Chicago, Illinois, gives a brief resume of the work done by this committee.

Respectfully submitted,

I. H. Neece, M. D., Chairman,

Andy Hall, M. D.,

Harold M. Camp, M. D.,

Lloyd Arnold, M. D.,
A. C. Baxter, M. D.,
J. J. McShane, M. D.
Syphilis Control Committee.

APPROVAL OF DIAGNOSTIC LABORATORIES

Reprinted from the Illinois Health Messenger,
March 1, 1939.

Anyone who either has submitted specimens to diagnostic laboratories, or has performed the tests himself, knows that all too frequently discrepant results occur. Some of these divergent findings are explainable on the basis of changes known to occur in the course of a disease, inadequate or improper specimens, accidents or delays in the transmission of specimens to the laboratory, or other causes. However, when a carefully collected specimen is divided and sent to several laboratories simultaneously, the results should agree within the limits of error inherent in the methods used. That the results sometimes do not agree is attributable to inaccurate work or faulty methods.

This state of affairs was shown to exist in the serodiagnosis of syphilis by the performance evaluations conducted by the United States Public Health Service. State, municipal and private laboratories all over the country participated in these studies and received identical specimens of blood drawn at the same time from the same patient. To consider only the widely accepted tests for syphilis, the results were briefly as follows—in specificity, the laboratories varied from 100 to 91%; this means that up to as many as 9% of falsely positive reactions were obtained in some laboratories on specimens from normal, non-syphilitic donors. Sensitivity, the ability to detect syphilis, varied from 92 to 31%. The laboratory giving the latter figure was missing over 60% of positive reactions in blood from known syphilitics. The above findings clearly demonstrated the need for critical auditing of the efficiency and reliability of the work of diagnostic laboratories all over the United States.

Because laboratory results may form a very important part of the evidence in arriving at a diagnosis, in applying or lifting quarantine restrictions, or in guiding the therapy of some of the communicable diseases, a plan of registration and approval of Illinois diagnostic laboratories was initiated by the State Department of Public Health.

The broad objectives of this plan are (1) to urge and facilitate the use of the best available methods (2) to elevate the general quality of laboratory work to at least a minimum level of consistency and reliability, and (3) to accomplish these ends by education, encouragement and assistance, rather than by repression.

The first step in developing the Illinois plan was a study of methods of laboratory control in use in other states. From a careful analysis of the large mass of detailed procedures and policies in vogue in the various states, a comprehensive summary was prepared and submitted to a specially appointed advisory committee. This body, known as the "State Advisory Committee on Laboratory Standards," consists of the following members:

Dr. A. A. Day, Professor of Bacteriology, Northwestern University—Chairman.

Dr. Lloyd Arnold, Professor of Bacteriology and Public Health, University of Illinois, College of Medicine.

Dr. Lewis Hill, Clinical Pathologist, Associate Professor of Bacteriology and Preventive Medicine, Loyola University, School of Medicine.

Dr. I. H. Neece, Councilor, Illinois State Medical Society.

Dr. J. L. White, Chief, Bureau of Laboratories, Chicago Board of Health.

Dr. Reuben L. Kahn, University of Michigan, Consultant in Serology.

Dr. H. E. McDaniels, coordinating Bacteriologist, Illinois Department of Public Health—Secretary.

This Committee selected the best features of the several State plans and worked out a program which is adapted to conditions in Illinois. Aside from valuable general advice, the principle functions of this Committee are:

1. To set down definite minimum requirements for each type of test for which approval is to be given.
2. To hear and recommend action on any complaints arising out of the issuance or withdrawal of approval by the Department of Public Health.

Voluntary cooperation is the basis upon which the approval program has been initiated. It was agreed that the experience accumulated under this plan would be the best guide in deciding whether or not legislation was necessary to accomplish the desired objectives.

To cooperate in this plan, a laboratory first registers with the Department of Health. The registration consists of a statement of name, address, and ownership, together with an abstract of the training and experience of the personnel. A description of the laboratory, the types of tests performed, and an estimate of their numbers per year are also included in the registration.

Space is provided on the registration blank for the director to indicate whether or not he is interested in having his laboratory approved for certain tests. If he does wish to gain approval, he is asked to sign an agreement, and the laboratory is carefully inspected. The agreement records the intention of the operator to conduct his laboratory work in an ethical manner and, among other things, sets forth his willingness to test and report findings on "check" specimens which are sent to him from time to time. As soon as the signed agreement is received, a manual of "Standard Laboratory Procedures" and a supply of standard Kahn antigen are sent to the laboratory.

Emphasis is placed on the ability to get accurate results, and this ability is tested by means of "check" specimens submitted under code numbers. The identity of cooperating laboratories and their results on test materials are kept confidential. Each laboratory is assigned a registry number known only to the coordinating office and to the individual laboratory. When tabulations of results are published, they appear only under these laboratory registry numbers.

An important feature of the Illinois approval plan

is the absence of "blanket" approval for all tests in which a laboratory may engage. It is quite generally agreed that one person is seldom an expert in all types of laboratory diagnosis and the staff of many of the smaller hospitals and private laboratories consists of only one person. Approval is given for specific tests in which the laboratory has shown ability, as judged by results on the "check" specimens.

Approval is granted on an annual basis, and is so stated on the Certificates of Approval. This arrangement, together with the annual registration, is expected to keep the plan up to date, and to keep the co-ordinating office in touch with any changes which may occur in local laboratories.

Reference has been made to "check" specimens, and their importance in the approval plan. Briefly, the procedure is to collect material in quantity from donors or patients and to divide it among a group of thirty to forty laboratories so that the individual samples are identical. With blood serum, this is easily done; in the case of smears, sputum, etc., provision is made for possible variations in the samples. In the case of smears for gonococci, for example, a series of smears may be made from a positive case and 98% of the slides in the series will show typical intracellular gonococci. The remaining 2% may be reported negative and actually may be negative. The latter point is determined by a careful re-examination of the returned slides.

When all findings on a group of "check" specimens are returned, they are tabulated opposite the registry numbers of the participating laboratories. In addition to this tabulation, a brief excerpt of the clinical history of each donor is included. Each laboratory participating in the testing of such a set of specimens receives the above summary and may see at a glance how its results correspond with those of the other laboratories. Since a majority of laboratories agree and obtain results consistent with the clinical status of the donors, it has not been necessary for the co-ordinating laboratory to set down a "control" result; the correct result is self-evident in the tabulation.

In the nine months that the approved plan has been operative, attention has been concentrated on the common tests for the venereal diseases. In this period of time, 139 laboratories have registered, 107 laboratories are giving full cooperation, and 44 laboratories have been approved for gonococcus smear diagnosis, serodiagnosis of syphilis and darkfield examinations. Taking the results as a whole in serodiagnosis of syphilis, there has been a 16% laboratory failure. This means that among all the laboratories tested, 16% have missed the diagnosis of one or more serum samples. On the same basis, 30% of the laboratories have missed the diagnosis of one or more gonococcus smears at one time or another during this period.

Great improvement has resulted in many laboratories following the adoption of recommended methods, and particularly following the correction of specific errors which were brought to light during inspections. There has been a complete acceptance of the standard Kahn antigen produced by the Biological Laboratories of the

Department. This speaks well for the quality of the antigen because most laboratory workers are reluctant to change their source of supply of such reagents.

Soon to be added to the list of tests for which approval will be granted will be laboratory tests for types of pneumococci and detection of diphtheria and tubercle bacilli. A beginning has been made in standardizing the typing of pneumococci through a course of instruction offered at the Chicago Laboratories of the Department of Public Health. The Department and the United States Public Health Service are cooperating in this course which is open to municipal, private and hospital laboratory workers in Illinois.

REPORT OF PHYSICAL THERAPY COMMITTEE

To the Members of the House of Delegates:

I beg to report that after a questionnaire sent to practically all the medical schools to which students from Illinois attend, we find that they give no uniform course of instruction in physical therapy.

Some schools give no course at all, some but very little, and some quite extensive. In some schools it is optional, and in some it is compulsory.

I have met with some members of the committee and other physicians who are intensely interested in physical therapy, and it is our opinion that there is a great lack of knowledge among the ordinary physicians concerning the good that can be derived from physical therapy measures when scientifically applied.

It is also our opinion that much valuable information could be disseminated if the medical societies would occasionally have some physician appear on their program who is qualified to discuss physical therapy measures.

High powered salesmen have induced many physicians to spend hundreds and thousands of dollars upon apparatus that is practically useless in curing or relieving human ailments. If it were possible to secure men qualified to lecture on physical therapy each county society should have a program of this kind at least once a year, but so far as we can learn, very few men are qualified to give a worth while lecture on physical therapy.

Respectfully submitted,
 Andy Hall, M. D., Chairman,
 Bernard Fantus, M. D.,
 D. H. Levinthal, M. D.,
 Milton Schmitt, M. D.,
 Rudolph Mroz, M. D.,
 F. Flinn, M. D.,
 Committee on Physical Therapy.

REPORT OF COMMITTEE ON CORPORATION PRACTICE

To the Members of the House of Delegates:

The Committee on Corporation Practice has waited in vain for some sign that the law against this practice which was handed down by the Supreme Court several years ago would either be obeyed voluntarily by guilty

organizations or would be enforced by the officers of the State who are charged with such duties.

Neither of these actions has taken place. In consequence the Committee has set about the task of getting a legal answer to the problem.

A suit is about to be inaugurated to bring a defendant corporation into Court to explain there why the law is disobeyed.

Charles B. Reed, M. D., Chairman,
John O'Connell, M. D.,
John R. Neal, M. D.,
Rollo K. Packard, M. D.,
Committee on Corporation Practice.

REPORT OF COMMITTEE ON MENTAL HYGIENE

To the Members of the House of Delegates:

Recognizing the importance of adequate training and supervision for mentally handicapped children and the inadequate facilities for these opportunities at the present time, the committee on Mental Hygiene has prepared a program for their care.

There is an urgent need for a state institution for those retarded children who are educable, but cannot be kept in their homes. Children who are subnormal, but not feeble-minded, present personal educational and social problems. Their educational program should conform to their individual abilities and their environment must be sufficiently simple and friendly to meet their emotional needs and thereby make an adjustment possible. If these conditions are not provided, the child becomes confused, apprehensive and resentful. He then reacts by becoming dependent and lacking in initiative on the one hand or he reacts by aggressive destructive tendencies which commonly lead to paranoid trends and antisocial behavior on the other hand. These serious problems are preventable by the early recognition of the intellectual deficiency and proper management of the child. A school and environmental program adequate for the needs of these children is best provided in the home and local school; but very often this is impossible and many children show signs of serious maladjustment during their early years. At the present time there is no place in Illinois for adequate training of these children before they become serious problems. The state has two institutions for the most seriously mentally handicapped, but none for these borderline cases.

Your committee recommends the establishment of a farm colony on the cottage plan where these borderline cases can be trained and properly educated so that many of these children can be returned to society with safety and become useful self-supporting citizens.

With this in mind, a bill has been prepared which may be acted upon during the present session of the state legislature.

Respectfully submitted,
J. C. Krafft, M. D., Chairman,
Bert I. Beverly, M. D.,
Abraham Levinson, M. D.,
Committee on Mental Hygiene.

REPORT OF COMMITTEE ON OCCU- PATIONAL DISEASES

To the Members of The House of Delegates:

As our committee has been only recently appointed, there has been little opportunity for activity. My report, therefore, will outline the work this committee hopes to perform in the next year.

With the passing of the Occupational Diseases Act in the State of Illinois industry is confronted with a great many problems. The Act outlines and describes fairly definitely what shall be an occupational disease although there are many loopholes and chances for controversy, and in due time it will be necessary to amend this Act.

The wording of the law at the present time is such that certain diseases come definitely under the heading of "Occupational." Foremost among those are the diseases of the lungs, especially the pneumoconioses and more particularly silicosis. Silicosis in its advanced stage, as a definite entity or associated with tuberculosis, is not difficult to diagnose from the case history, physical examination and x-ray findings. In the very early stages of this disease there is no method or no procedure yet devised which will aid us in making a positive diagnosis. It is in these cases that physicians who care for industrial patients must take up a definite study of the physical findings and the changes as shown in the x-ray. It is to be hoped that every one who attempts to diagnose or treat such cases will prepare himself very thoroughly by such a study since when once a diagnosis of silicosis has been made it is most difficult to refute before the Industrial Commissions, even though the subsequent clinical course and findings show it not to have been a true silicosis.

From time to time this committee hopes to make certain contributions which will be of aid in evaluating these lung diseases.

Respectfully submitted,
Philip H. Kreuscher, M. D., Chairman,
Frank P. Hammond, M. D.,
H. C. Lyman, M. D.,
Committee on Occupational Diseases.

REPORT OF WOMAN'S AUXILIARY

To the Members of the House of Delegates:

As president of the Woman's Auxiliary to the Illinois State Medical Society I wish to submit the following report:

1. Including our Pre-Convention Board Meeting, May 2nd, 1939, we will have had four (4) Board Meetings during the year.

2. ORGANIZATION AND MEMBERSHIP. (a) There are twenty-one (21) organized counties in the State—three new counties, Crawford, DeWitt and Logan having been organized this year. Clinton County which was not organized until this year has united with Marion County.

(b) Our membership is 912—which shows an increase of 72 over last year.

3. PROGRAM. In order that we as Auxiliary members might better inform ourselves in order to

inform others regarding health topics, current medical legislation and socialized medicine, study groups have been advocated. Many of our Auxiliaries have already formed these study groups and we hope that continued interest in this activity will be shown in the future.

Greater interest has been shown in Laity Day programs—75 such programs having been held throughout the State during the year.

4. PUBLIC RELATIONS. Material on health subjects which could be used by County Auxiliaries has been sent out by the State Public Relations Chairman. This has included Health Posters recommended by the American Medical Association and, also, copies of the pamphlet, "On the Witness Stand," by J. Weston Walch. Our members are urged to be continuously on the alert regarding any health topic that may be brought up in their lay organizations.

5. HYGEIA. Cook County has for the third consecutive year won first prize for Hygeia in Group III. This prize of \$50.00 was immediately put into school placements throughout the County. Our total subscription this year is 798—an increase of 121 over last year.

6. LEGISLATION. Each county has been asked to have a Legislation program this year and we have urged our members to take an active interest in any matter coming up in the legislature and to cooperate with any request made by Dr. John R. Neal.

The Woman's Auxiliary to the Illinois State Medical Society wishes to take this opportunity to thank the Illinois State Medical Society for their generous contribution this year to enable them to carry on their work. We also, wish to express thanks to the president for his kindly interest, to the Secretary for his cooperation and help, especially in matters relating to the Convention, to the Advisory Committee for their Advice whenever called upon and, also, to the editor of the Illinois State Medical Journal for the space allotted to us in the Journal.

Respectfully submitted,
(Mrs. William) Helen Raim,
President, Woman's Auxiliary.

The President: There is no unfinished business, so we will pass on to the introduction of resolutions.

Dr. Charles B. Reed, Chicago: I wish to introduce the following amendment to Article IV, Section 3 of the constitution and by-laws, which now reads:

"*Members:* The members of this Society must hold the degree of Doctor of Medicine or its equivalent, and be members in good standing of the component societies."

It seems desirable to amend this section to read:

"Section 3. *Members:* The members of this Society must hold the degree of Doctor of Medicine or its equivalent, be members in good stand-

ing of the component societies, and *citizens of the United States.*"

The Committee on Constitution and By-Laws recommends this change.

Dr. A. H. Bitter, Quincy: I wish to introduce the following resolution which was adopted by the Adams County Medical Society (Illinois) March 13, 1939.

2. RENTAL OF RADIUM

The report of the special committee, appointed by the President of the Adams County Medical Society (Illinois), to study the present ruling of the American Medical Association relative to the rental of radium, is as follows:

Whereas, the House of Delegates of the American Medical Association, at the San Francisco Session last year, did pass certain resolutions condemning the rental of radium under certain conditions; viz, the prescribing and directing of the use of radium in the case of a patient whom the prescriber has not examined or seen.

In consideration of the fact that such a rigid ruling would work a great hardship on thousands of members of the American Medical Association and cause great suffering to thousands of citizens of this United States, especially those who are remotely situated from the sources of radium; that many patients would be denied the use of radium if they were compelled to make long trips to a source of radium; that many patients have such great confidence in their physicians that they distinctly prefer that he personally administer such radium treatment; that since the pioneers in radium therapy and probably the greatest advocates of radium were not radiologists but leading gynecologists and dermatologists; that since many specialists are as well qualified to make many of the applications of radium (because of their specialized knowledge and surgical technic) as is the average radiologist; that since an experience of over twenty-five years, during which time many thousands of patients have been treated, has shown that many conditions in which radium is commonly used can be satisfactorily treated, and with great benefit to the patient, by the average physician under proper supervision and without a radiologist personally examining the patient on whom the radium is to be used; that because of the great expense of radium it is not practical for the

average physician to own it; furthermore that the average physician sees so few cases in which radium is needed in his practice that it is not practical for him to make the large financial outlay to purchase it; furthermore since it is already considered an ethical procedure for physicians to lease radium for long periods or own it outright, regardless of their qualifications to use it.

Resolved, therefore, that it is considered ethical for a member of the American Medical Association to personally describe or write a description of a patient on whom he wishes to consider the use of radium, submitting same to an experienced radiologist, who likewise is a member of the American Medical Association; that if the condition is one in which the use of radium is frequently used, and if the radiologist believes the physician submitting the description can use radium with benefit to the patient, that he may, therefore, prepare suitable radium applicators and recommend a technic of application and suggest dosage for the treatment of the case under consideration.

Moved the adoption of these resolutions with recommendation that a copy be sent to the Secretary of the Illinois State Medical Society; that the delegate of the Adams County Medical Society be instructed to present them to the House of Delegates of the Illinois State Medical Society at its next annual session (Rockford) for their approval, and with the request that the Delegates of the Illinois State Medical Society be requested to present them to the House of Delegates of the American Medical Association at its St. Louis Meeting. Adopted without a dissenting vote by the Adams County Medical Society.

Dr. F. G. Norbury, Jacksonville: I wish to introduce the following resolution from the Morgan County Medical Society:

3. IMPROVEMENT OF FACILITIES FOR POSTGRADUATE STUDY

Be it resolved that a temporary committee of five be appointed to study methods of improving postgraduate facilities for study, especially postgraduate extension courses, for Illinois physicians; this Committee to report to the House of Delegates at its next annual meeting.

Dr. Andy Hall, Mt. Vernon: After looking over the last number of the Journal of the

American Medical Association I was prompted to write this resolution which I shall read.

4. MEDICAL LICENSURE

Whereas, the Council on Medical Education and Hospitals of the American Medical Association, in their report for 1938, on medical licensure statistics, shows that during the past year 187 graduates from unapproved schools were registered in the entire United States, and of that number, 60, almost one-third, were registered in the state of Illinois; and

Whereas, this report shows that during the five year period, 1934-1938, that 866 graduates from unapproved medical schools were registered in the United States, and that of this number, 326, or more than one-third of the total were registered in Illinois; and

Whereas, this report states that during the past year 819 graduates from foreign schools were registered in the United States and, with the exception of New York, more of these applicants were registered in Illinois than in any other state; and,

Whereas, 22 states, territories and provinces of the United States require full citizenship as a requisite for registration and 16 others require first papers as a requisite for registration, but Illinois requires none of these qualifications; and,

Whereas, while Massachusetts and Illinois each permit foreigners, as well as graduates from unapproved medical schools to apply for registration, the percentage of failures of all applicants in the state of Massachusetts is 47.2, while the percentage of all applicants who apply in Illinois who fail is only 2.0 and,

Whereas, these statistics indicate that Illinois is becoming the dumping ground for physicians whose qualifications will not permit them to register in other states; therefore

Be it resolved, that it is the sense of the House of Delegates of the Illinois State Medical Society, that these facts should be called to the attention of Governor Horner, the President of the Senate, the Speaker of the Legislature, the Director of Education and Registration and the State Board of Medical Examiners, with the recommendation that such rules be promulgated, and if necessary, laws be enacted, that will admit only citizens of the United States and graduates

of Class A Medical Schools to take the examination for medical licensure.

Aside from the stability of the Government, the honesty of its administration, and the intelligence of its people, the welfare of a nation depends more on the character of the medical service rendered than any other one thing. Hence, the necessity of requiring a high standard of medical qualifications to those who would seek license to practice medicine in this state.

Dr. F. P. Hammond, Chicago: I have been asked by Mrs. R. K. Packard, By-Laws Revision Chairman, to introduce the following resolution on behalf of the Council of the Woman's Auxiliary to the Illinois State Medical Society.

5. ORGANIZATION OF A WOMAN'S AUXILIARY TO THE COUNTY MEDICAL SOCIETY

Whereas, the American Medical Association has endorsed the Woman's Auxiliary to the American Medical Association, and

Whereas, the Illinois State Medical Society has endorsed the Woman's Auxiliary to the Illinois State Medical Society, and

Whereas, one of the chief objectives of the Woman's Auxiliary is Public Relations and Education, and

Whereas, the members of the Woman's Auxiliary are members of various clubs and organizations and in a position to render valuable aid in the furtherance of such Public Relations and Educational work, and

Whereas, several states have contributed notably to this work, and

Whereas, there are several counties in Illinois where there has not yet been organized a County Auxiliary to the County Medical Society, and

Whereas, the main objective of the Auxiliary is Public Relations, and

Whereas, in order that the Woman's Auxiliary cannot carry on a well organized State program without a majority of the counties organized, therefore

Be it resolved, that the Illinois State Medical Society urge all County Society members and officers to cooperate to the end that a Woman's Auxiliary to the County Medical Society be organized.

Dr. E. P. Coleman, Canton: I wish to introduce a resolution which was brought before the

Council this morning through the efforts of the Forty and Eight Club of the American Legion.

6. ESTABLISHMENT OF A STATEWIDE PLAN FOR DIPHTHERIA PREVENTION

Whereas, there has been no uniform organized effort on the part of the Medical Societies in Illinois to completely eradicate diphtheria, and

Whereas, it is a well known fact that through proper and early immunization diphtheria can be safely and surely prevented, and

Whereas, there are still many deaths each year in Illinois from this disease and thousands of children have not been given the proper immunization precautionary measures which are available, therefore,

Be it resolved, that the House of Delegates of the Illinois State Medical Society in annual session in the city of Rockford on May 2, 3, 4, 1939 do hereby recommend that a statewide plan be developed, perhaps similar to the so-called "Indiana Plan" which has been successfully operating in the State of Indiana and under the supervision of the State and County Medical Societies, wherein the object is the establishment of a continuous, sustaining program for diphtheria prevention that will reach all children of the community, regardless of economic status.

Be it further resolved, that to insure the success of the plan, we seek the cooperation of local public health offices and officials, the county medical society, the Department and local American Legion and affiliated organizations, the local school systems, and the local physicians.

(Signed) C. R. Bates, Ladd

S. Horwitz, Peoria

Norman Sheehe, Rockford

Committee from "40 and 8."

The President: If there are any further resolutions to be presented they can be handed to the Committee before Thursday morning.

Dr. A. H. Bitter, Quincy: I would like to move that the Committee on Resolutions draft suitable resolutions concerning the death of a past-president, Dr. L. H. Nickerson. (Motion seconded and carried.)

The President: I am very sorry to say that I did not know that Dr. Nickerson was dead. He was one of the first men with whom I became acquainted when I joined the Illinois State Med-

ical Society over forty years ago. I am sure that a suitable memorial will be drawn up.

The Secretary: I have a communication which has come to this House of Delegates and which has not been approved. This comes under date of April 7 from Dr. W. C. Woodward, Director of the Bureau of Legal Medicine of the American Medical Association.

"I certainly hope that the Illinois State Medical Society, while it is in session in Rockford, May 2-4, will voice a strong demand for an appropriation for the construction of a new building for the Army Medical Library and Museum, in Washington, and that it will appoint a committee to follow this matter through until an appropriation has been made. The situation is urgent, and immediate action is necessary."

Dr. Woodward then goes on to cite the legislative situation and the need for such a library.

I move that this matter be referred to the Committee on Miscellaneous Business for study and action on Thursday morning. (Motion seconded by Dr. C. B. Reed, Chicago, and carried.)

The Secretary: I have a number of candidates who have been elected to Emeritus Membership by the County Societies. They are potential emeritus members of the State Society.

Rufus G. Collins, 4511 Woodlawn Ave., Chicago
 Thomas J. O'Malley, Plaza Hotel, Chicago
 Bertha Van Hoosen, 1425 E. Marquette Road, Chicago
 P. H. Stoops, Ipava, Illinois
 W. E. Shallenberger, Canton, Ill.
 D. L. Bley, Staunton, Ill.
 John English, Gillespie, Ill.
 Annie Alguire, Belvidere, Ill.
 A. W. Swift, Belvidere, Ill.
 S. P. Schroeder, Nashville, Ill., who is also a Fifty Year Club member.

Dr. N. S. Davis, III, Chicago: I move that the Secretary be instructed to cast an affirmative ballot for the election of these members. (Motion seconded by Dr. R. H. Hayes, Chicago, and carried.)

The ballot was cast and the President declared the candidates named elected to Emeritus Membership.

Dr. E. S. Hamilton, Kankakee: One of our past presidents is not able to come to this meeting on account of ill health. I move you that the Secretary be instructed to send a telegram to Dr. Charles Skaggs of East St. Louis, telling him

how much we miss him. (Motion seconded by Dr. L. O. Frech, Decatur, and carried.)

Dr. Mather Pfeiffenberger, Alton: I move that the same thing be sent to Dr. Charles E. Humiston. (Motion seconded by Dr. R. H. Hayes, Chicago, and carried.)

The President: We are to have the pleasure of a short talk from the Orator from the Section on Medicine, Dr. Leroy Edward Parkins, Boston, Mass., who has had a vast experience in organized medicine. He was loaned from the Graduate Department of Harvard Medical School to the State Medical Society for the program of postgraduate instruction that has been in use there. It is a very nice thing to tell you that Dr. Garm Norbury and Dr. Parkins were classmates, and this occasion is a reunion for them after many years separation. I have the pleasure of introducing to you Dr. Parkins.

Dr. Leroy Edward Parkins, Boston, Mass.: I will bring you greetings from the Medical Society of Massachusetts. All I can tell you in a few moments is about our Committee on Postgraduate Instruction of which I happen to be the secretary. I have been on this Committee eight years and so we have weathered several storms. We began with a resolution such as Dr. Norbury presented to you today, out of which has begun something like a snowball. In 1931 we appointed a temporary committee to present a plan for study. We sounded out our schools, the health department and everyone who had anything to offer was invited to give it to the Committee. We got lots of ideas. We tried to group them all together and we started off on a plan which evolved itself into a school. The Massachusetts Medical Society decided to run a postgraduate school. The Medical Society will do anything. Michigan decided to run an insurance plan, and we passed a resolution last week deciding that we would do the same thing. Our Committee is organized just like a University background. We have a general committee that corresponds to the Board of Trustees of the University. It comprises our chairman of the State Society as well as other people who are interested in teaching principles. There is one thing of interest to all members of organized medicine, and that is the great power you have as an organization. That is quite important right now because there are some tremendous things going on in our national government and it is very important that we recognize that millions of dollars are available still.

We went on our way supporting our own program until about three years ago. Prior to that time the Harvard Medical School was the only school in medicine that provided extensive postgraduate courses, and their enrollment in any one year never ran over 200 or 300. I was secretary of the Postgraduate Division of Harvard. We admitted we could not go on with

2226466

our program because the universities did not go out and sell their postgraduate work. The State Department of Health tried to sell postgraduate work and failed. Organized medicine in the form of the State Society can do it, and if you start it nothing can stop you. That is my absolute belief. We provided our own money until three years ago. At that time the House of Delegates seriously discussed whether we would cooperate with the government agencies, consisting of the Department of Interior, the Children's Division, the U. S. Public Health Service, local and state health departments which receive federal funds. They were all in Massachusetts operating their own way. Who were they trying to teach? They were trying to teach us. We had our own committee so we went to the State Health Department and said we would be glad to cooperate. We made them a proposition. I found that \$2,500 was available for the treatment of gonorrhea. How much do you think that would help in the treatment of gonorrhea? Very little. I suggested that they turn over \$1,500 to the Medical Committee. Much to my surprise they did. We started off. The Council of our House of Delegates decided that we might ask for government aid. After three months our request was approved in Washington—it takes patience to deal with the government.

We have finished our third year. We voted last week to continue our cooperation with the government, which has provided most of the funds. I think it will continue. I called up the State House before I left Boston. The budget has to be in before May 15, so I have a job making out the budget. We have a school equipped and all ready to go to do their work for them. We have the federal machinery all ready to carry out the activities the government want to do. They are delighted apparently so far to have the Society carry on this work. We had a general agreement to carry it on for three years.

Your group here does not include all the physicians in Illinois, the same as in Massachusetts. There are 2,000 doctors in Massachusetts outside the State Medical Society. They help to pay taxes. We had a great many debates in the House of Delegates on whether we would accept outside doctors in the course of instruction. We have to recognize that we are not our brother's keeper. They are citizens legally entitled to practice medicine. We allow them to enter our course but they still do not belong to the Society. It has worked very well. In Suffolk County, which is Boston, it was pretty tough to organize a teaching course because of the many meetings of the State Society, hospital staffs of the various schools, and other interests, but we enrolled 425 doctors for the course this year. That is a great improvement over what we have done before. We hope to go along with the government help in the future.

The President: If there is no further business I will entertain a motion for adjournment.

Dr. Charles B. Reed, Chicago: I move that we adjourn until nine o'clock Thursday morning.

(Motion seconded by Dr. E. H. Weld, Rockford, and carried.)

The House adjourned at 4:50 P. M.

SECOND SESSION

Thursday Morning, May 4, 1939

The Thursday morning session was called to order at 9:47 A. M. by the President, Dr. Samuel E. Munson, Springfield.

The President: The first order of business is the report of the Credentials Committee.

Dr. E. P. Coleman, Canton: At this session there are registered 44 delegates from down state, 26 Chicago Medical, and 14 members of the Council, a total of 84. At the first meeting on Tuesday, there were 68 delegates from downstate, 45 Chicago Medical Society and 15 members of the Council, a total of 128. I move you, Mr. President, that these 84 delegates constitute the House of Delegates for this meeting. (Motion seconded by Dr. John W. Long, Robinson, and carried.)

The President: The next order of business is the roll call by the Secretary.

Dr. E. S. Hamilton, Kankakee: I move that the attendance slips constitute the official roll call. (Motion seconded by Dr. L. O. Frech, Decatur, and carried.)

The President: The next order of business is the reading of the minutes of the first session.

(The Secretary read the minutes and it was moved by Dr. L. E. Day, Chicago, and seconded by Dr. I. H. Neece, Decatur, that the minutes be approved. Motion carried.)

The President: The next order of business is the election of officers. Nominations are in order for President-Elect.

Dr. Andy Hall, Mt. Vernon: It gives me great pleasure at this time to put in nomination for President-Elect an old friend and neighbor, and a member of the Medical Society for forty years, Dr. J. S. Templeton of Pinckneyville.

Dr. L. O. Frech, Decatur: I move that the nominations be closed and the Secretary cast the affirmative ballot for Dr. Templeton. (Motion seconded by Dr. J. W. Long, Robinson, and carried.)

The ballot was cast and the President declared Dr. Templeton elected.

The President: Nominations are in order for First Vice-President.

Dr. E. H. Weld, Rockford: I would like to nominate Dr. J. S. Lundholm, Rockford.

Dr. C. E. Wilkinson, Danville: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Lundholm. (Seconded by Dr. E. S. Hamilton, Kaukaee, and carried.)

The ballot was cast and the President declared Dr. Lundholm elected.

The President: Nominations are in order for Second Vice-President:

Dr. W. S. Bougher, Chicago: I wish to nominate Dr. F. H. Muller of Chicago for Second Vice-President:

Dr. C. E. Wilkinson, Danville: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Muller as Second Vice-President. (Motion seconded by Dr. Oscar Hawkinson, Chicago, and carried.)

The ballot was cast and the President declared Dr. Muller elected.

The President: Nominations are in order for Secretary.

Dr. E. P. Coleman, Canton: For the past ten or fifteen years it has been my privilege to nominate the Secretary to succeed himself, and since it has become a habit I want to nominate Dr. Harold M. Camp.

Dr. Mather Pfeifferberger, Alton: I move that the nominations be closed and the President instructed to cast the affirmative ballot for Dr. Camp as Secretary. (Motion seconded by Dr. Oscar Hawkinson, Chicago, and carried.)

The ballot was cast and the President declared Dr. Camp elected.

The President: Nominations are in order for Treasurer.

Dr. W. E. Kittler, Rochelle: Dr. Coleman has had the pleasure of nominating Dr. Camp for fifteen years. I have had the pleasure of nominating our young friend for fifteen years or more. I wish to again nominate Dr. A. J. Markley to succeed himself.

Dr. J. S. Templeton, Pinckneyville: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Markley as Treasurer. (Motion seconded by Dr. John W. Long, Robinson, and carried.)

The ballot was cast and the President declared Dr. Markley elected.

The President: The next order of business is the election of Councilors from the Third, Sixth, Ninth and Tenth Districts. Nominations are in order for Councilor from the Third District.

Dr. John S. Nagel, Chicago: I wish to nominate Dr. L. E. Day, Chicago.

Dr. John S. Nagel, Chicago: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Day. (Motion seconded by Dr. Mather Pfeifferberger, Alton, and carried.)

The ballot was cast and the President declared Dr. Day elected.

The President: I shall entertain nominations for Councilor from the Sixth District, Dr. T. B. Knox retiring.

Dr. A. H. Bitter, Quincy: I wish to nominate Dr. T. B. Knox to succeed himself.

Dr. C. E. Wilkinson, Danville: I move that the nominations be closed and the Secretary instructed to cast an affirmative ballot for Dr. Knox. (Motion seconded by Dr. L. E. Day, Chicago, and carried.)

The ballot was cast and the President declared Dr. Knox elected.

The President: Nominations are in order for Councilor from the Ninth District, Dr. Andy Hall retiring.

Dr. T. B. Williamson, Mt. Vernon: I wish to nominate Dr. Andy Hall, Mt. Vernon, to succeed himself.

Dr. J. W. Long, Robinson: I move that the nominations be closed and that the Secretary be instructed to cast the affirmative ballot for Dr. Hall. (Motion seconded by Dr. Charles B. Reed, Chicago, and carried.)

The ballot was cast and the President declared Dr. Hall elected.

The President: Nominations are in order for Councilor from the Tenth District to fill the vacancy created by the election of Dr. J. S. Templeton as President-Elect.

Dr. J. S. Templeton, Pinckneyville: I wish to nominate Dr. H. G. Horstman of Murphysboro.

Dr. C. E. Wilkinson, Danville: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Horstman. (Motion seconded by Dr. Charles B. Reed, Chicago, and carried.)

The ballot was cast and the President declared Dr. Horstman elected.

The President: Nominations are in order for the election of delegates to the American Medical Association, one from the Chicago Medical Society and three from downstate.

(Nominations were presented in each case and the following delegates elected: Charles B. Reed, Chicago, L. O. Frech, Decatur, C. E. Wilkinson, Danville, W. E. Kittler, Rochelle.)

The President: Nominations are in order for alternate delegates to the American Medical Association, one from Chicago Medical Society, three from downstate, and one for one year.

(Nominations were presented in each case and the following alternate delegates elected: Frank L. Brown, Chicago, E. H. Weld, Rockford, C. W. Carter, Clinton, E. P. Coleman, Canton, and Mather Pfeifferberger, Alton, for one year.)

The President: Nominations are in order for members of Standing Committees.

(Nominations were presented in each case, the Secretary instructed to cast the affirmative ballot for the following members of the Standing Committees, and they were declared elected by the President.)

Public Relations: W. S. Bougher, Chicago, Chairman, H. W. Woodruff, Joliet, and Fred H. Muller, Chicago.

Medical Legislation: John R. Neal, Springfield, Chairman, Robert H. Hayes, Chicago, and Mather Pfeifferberger, Alton.

Medico-Legal: (Two members for three year term): T. B. Williamson, Mt. Vernon, and Oscar Hawkins, Chicago.

Medical Education and Hospitals: N. S. Davis, III, Chicago, W. R. Marshall, Clinton, and H. O. Munson, Rushville.

Relations to Public Health Administration: E. H. Blair, Chicago, Andrew Gansevoort, Chicago, Thomas Meany, Chicago, L. O. Frech, Decatur, and C. G. Pool, Compton.

The Secretary: A year ago just before the House of Delegates ended Dr. Nagel made a very short talk on one of his brain children, some plan to care for decrepit physicians and their wives. The House instructed Dr. Nagel to make an additional report. It was referred to the Council. I wonder, Mr. President, if he might not make a report at this time.

The President: If I hear no objection I will extend the privilege of the floor to Dr. Nagel for a report on this subject.

Dr. John S. Nagel, Chicago: A committee was appointed consisting of myself, Charles B. Reed and Percy Hopkins. We met and our conclusion was to place this matter before the House of Delegates for you to vote on the proposition of whether the Council should provide assistance in the form of finances or something to help the matter. We look toward the forming of a fund which would in the future be used to establish a home. The idea is not altogether original with me by any means because they have such a proposition in New York, Pennsylvania, and New Jersey whereby they have established a fund for the care of indigent doctors and their wives. I keep emphasizing all the time the wives because we have in the state of Illinois a fairly well organized Woman's Auxiliary, and it was part of my brain storm to call upon these women to aid in soliciting and establishing a fund for such a proposition. I might say that almost simultaneously with this idea of mine Mrs. Henkel of Springfield had the idea of looking towards the establishment of what she called a benevolent fund. I differed a little bit from Mrs. Henkel in establishing and soliciting of this fund. Her proposition was to have an elective board, a certain number of doctors to be elected for one, two or three years until such a time as the board was established, and then there would be one member elected each year to succeed the retiring member. I do not agree with that particular proposition, though it is a very easy matter to handle it. It is my idea that what I term a self-perpetuating board of trustees be established so that anyone who contributes funds for this purpose will know that no election or politics can ever interfere with the administration of the funds which they have left for a definite purpose. I have also mentioned this before but it is worth while repeating it so as to refresh your memory. There was a doctor in Chicago who died several years ago and left \$50,000 in trust for his widow with the proposition that at her death the income from this fund was to be used for indigent doctors. After a year or two of the existence of this trust his brother discovered that no one knew anything about the fund. He went to the Chicago Medical Society for information, and after sitting around for some time without getting the information he sought, he said he had the income of \$50,000 to give away but no one seemed to want it, and he went his way. The fact of the matter is that the income from this fund was then turned over to a self-perpetuating trust known as the Community Chest, in Chicago.

I have also said this before, that all the years I have been very active in the Chicago Medical Society we have been devoting a lot of time, to say nothing of a lot of money, to the attention of the dear public. Now is the time we did something for the dear doctor, I would like this House of Delegates to authorize the Council to proceed to form a self-perpetuating trust and then we can go out and solicit funds. The administration of these funds and what will be done with them is a matter to be worked out. I do not think we should stop here this morning to consider that. I know it can be worked out because it has been done.

This will not be accomplished in one or two years, but I suggest that we work along for ten years; the income from this fund will go toward helping out some old doctor or his widow who has lived beyond the age of usefulness, whose funds have become used up, and who has become an object of public charity. I could cite you some instances in Chicago and down state. It is my idea that we do something toward helping these people. Eventually we might get enough money together to build a home as they have done in New York. There are a great many more doctors in New York than in Illinois and the home for them is not sufficiently large to care for the doctors' widows. I think at the present time they are able to care for thirty but they have a waiting list.

What about the possibility of getting funds for this? Both the Chicago Medical Society and the Illinois State Medical Society from time to time have voted a lot of money for one thing or another which has not accrued to the members of the Society. Both of these organizations have considerable funds in their treasuries. I think we should use some of the funds for this purpose. In the State Society we have funds that are doing nothing except laying in the bank with the interest accumulating. Furthermore, it is my idea that we possibly raise the dues. That is why I asked to speak before the proposition of establishing the per capita tax for next year was brought up. I would suggest that a certain amount be turned over to the fund. Suppose we add a dollar from each member every year to this fund, it would go a long way toward establishing a fund. We have one dollar laid aside for the Medico-Legal Committee which is practically an obsolete institution in the present organization. I am not sure but what some of these funds could be used. I have tried to place this matter before you as briefly as possible. Dr. Reed and Dr. Hopkins are both present and I would like to have them called upon to present their views. I feel that the time has come when we ought to do something.

Dr. A. W. Meyer, Bloomington: Is there any chance of getting this fund back from the Community Trust?

Dr. Nagel: I am not sure. We cannot get hold of the \$50,000, but it might be possible to get the income. That would be a matter to be worked out with the Northern Trust Company which is the executor of the estate.

Dr. L. O. Frech, Decatur: This matter it seems to me is one that cannot be decided as to details here in this House of Delegates because we know nothing about it. Our Committee is working on it and they know the details, but they wish to get it before the House of Delegates so that something can come of it. I move that the matter be referred to the Council with the approval of the House of Delegates to adopt such

measures as may be worked out by the Committee and to report next year on what has been done, with power to act on the part of the Council. (Motion seconded by Dr. Andy Hall, Mt. Vernon.)

Dr. Charles B. Reed, Chicago: You heard the very lucid explanation from Dr. Nagel in regard to this matter. The Committee has gone over it very carefully and very thoroughly as far as we have gone. I agree wholly with Dr. Nagel. It seems to me all we need is the approval of the House and details can be worked out as Dr. Frech suggests and considered more in detail at the meeting next year.

Dr. Percy Hopkins, Chicago: I agree entirely with Dr. Nagel and Dr. Reed. If the House of Delegates is agreed on the proposition that a trust should be established, it should be done and then we will be in position to solicit funds. (Motion made by Dr. Frech carried).

Dr. T. B. Knox, Quincy: There is now being collected from every member of the Illinois State Medical Society a dollar for legal defense. It has been decided by the Supreme Court that we have no right any longer to practice law. I wonder if that dollar cannot be diverted into this fund. Is there some action that can be taken by the House of Delegates to divert that into another fund?

The Secretary: To make any change in that particular fund would require a change in the by-laws, and that cannot be done at this meeting. That would have to be taken up at the first meeting of the House and acted on at the second meeting.

Dr. Knox: I think some steps should be taken.

The Secretary: That could be taken up at the first meeting next year and acted on at the second.

Dr. Nagel: I would like to have the Secretary tell me where that is in the by-laws. It was my impression that the Council allocated the funds.

Dr. E. S. Hamilton, Kankakee: It was changed last year.

Dr. Charles B. Reed, Chicago: In the revision of the by-laws last year it was eliminated.

The President: I think Dr. Reed's statement is correct.

Dr. W. E. Kittler, Rochelle: This medico-legal business was killed about two years ago. What

has become of this dollar? In the meantime are we being assessed one dollar for a fund that is not being used?

The Secretary: In answer to Dr. Kittler, these allocations are purely book allocations. This year the auditor was given the authority by the Council to make diversion from one fund to another. The general fund is always overdrawn and it is always necessary to take money from the other funds. The expense of the annual meeting educational committee appropriations, and the Council expenses all come from the general fund. This allocation into the journal fund, the medico-legal fund, the educational fund is purely a book allocation because the money is all kept in one account. There is really not a dollar taken out and placed in a separate account.

Dr. Kittler: Then why must we wait until the next meeting?

The Secretary: I was in error. Until last year when the by-laws were changed, it stated that one dollar of the annual dues should go to the medico-legal fund.

(Motion made by Dr. Frech carried.)

Dr. T. B. Knox, Quincy: I would move that when we fix the annual dues which are now eight dollars, that the one dollar formerly paid into the medico-legal fund be diverted to this new fund and used for that purpose only.

The President: I think you are out of order.

Dr. E. S. Hamilton, Kankakee: I move that the dues be left at eight dollars for the next year. (Motion seconded by Dr. I. H. Neece, Decatur, and carried.)

The Secretary: The Council has authority to allocate funds.

Dr. Knox: I still insist that I am in order and that a dollar be collected for a specific purpose.

The President: This matter is already in the hands of the Council to allocate funds. I do not think it is the duty of the House of Delegates.

Dr. Knox: I would like to have the House of Delegates rule on this because there is complaint in my territory as to where this dollar is going. I would like to take back to these people that this dollar is going into a fund to care for them in their old age.

Dr. L. O. Frech, Decatur: As I understand this matter it is entirely out of the hands of the

House of Delegates. It has been referred to the Council and if the Council sees fit to take any of this fund and put it into a new fund, I have perfect confidence that they will do the right thing.

The President: The Chair will rule that this is in the hands of the Council at the present time. I think that will take care of Dr. Knox's idea entirely.

The next order of business is the selection of a meeting place for next year. This is a preferential vote, subject to the approval of the Council.

Dr. N. S. Davis, III, Chicago: We have the pleasure to invite the Illinois State Medical Society to meet next year in Chicago. We have not been your hosts since 1928. We have been very remiss. We enjoyed ourselves so much in going down state that we failed to invite you to meet in Chicago. We know we have adequate facilities, and the centennial year of the Society might appropriately be celebrated in the largest city of the state.

Dr. C. B. Ripley, Galesburg: I understand Peoria wants us. Peoria had the first meeting of the State Society.

The President: In reply to Dr. Ripley it is very definitely decided that Springfield is where the Society organized in 1840.

Dr. Everett C. Kelly, Peoria: I have the honor, the privilege and pleasure on behalf of the Peoria Medical Society to invite you for the centennial meeting in 1940. We have a new Shrine Mosque built in the past year which is adequate to take care of the meeting. I want to ask the privilege of the floor for our Convention Manager, Mr. Ward.

(Mr. Ward was given the privilege of the floor and gave a short talk on the facilities of Peoria.)

Dr. John R. Neal, Springfield: The first meeting was held in Springfield in 1840: Dr. Todd was the president and David Prince the secretary. We would like to have you celebrate the centennial in Springfield in 1940.

Dr. E. H. Weld, Rockford: I think we would be remiss in Rockford if we do not tell you we like to have you here, we enjoyed having you here and we would like to have you come back next year.

The Secretary: The last three days I have

been receiving mail and telegrams. I received a letter from the Chamber of Commerce of Springfield and a telegram from the Mayor, Mr. John Kapp, and letters from several organizations, but I did not receive a telegram from the Sangamon County Medical Society. I received communications from the Chicago Medical Society, the Association of Commerce and several hotels. Peoria has sent quite a few letters and a telegram from his Honor the Mayor. In defense of my good friend, Dr. Ripley, I want to say that history states that the men who organized this Society in 1840 went down to Springfield from Chicago in some kind of a wagon drawn by horses and they stopped in Peoria for a little conference before going to Springfield, but they actually organized in Springfield.

Dr. John S. Nagel, Chicago: I move that we proceed to ballot on the meeting place. (Motion seconded by Dr. Charles B. Reed, Chicago and carried.)

(On the vote by ballot Peoria received 47 votes, Springfield 40, and Chicago 4.)

Dr. C. B. Ripley, Galesburg: I move that the House of Delegates recommend to the Council that Peoria has been selected as the meeting place for 1940, subject to their investigations. (Motion seconded by Dr. E. C. Kelly, Peoria, and carried.)

The President: The next order of business is the reports of the Reference Committees.

COMMITTEE ON REPORTS OF OFFICERS

Presented by G. Henry Mundt, Chicago.

The Committee to review and report on the annual reports of President, President-elect, Secretary and Treasurer, and Chairman of the Council.

President's Report: Your reference committee commends the President for his far-seeing and understanding report.

President-elect's Report: Your reference committee agrees with the suggestion that the Illinois State Medical Society study and try to assist in, or control, funds to be expended on Public Health measures, especially requests from the Department of Public Health and the Division for Crippled Children in the Department of Public Welfare.

Your reference committee further commends the idea expressed by the President-elect that the matter be further studied, that more work may be transferred from the Health Department to the private physicians.

Report of Secretary: Your reference committee has read with great interest the report of your Secretary. It concurs in the suggestion that each member of the Society secure a copy of the Wagner Bill (Senate Bill

No. 1620), so that he may familiarize himself with its content. Also that the last report of the Surgeon General of the United States Public Health Service be studied, especially should every member of the Society be familiar with the statement that the United States is the healthiest nation in the world today, and that greater reduction in mortality and morbidity statistics have been made in the United States during the past two years than in any similar period.

The Secretary should be complimented for his having reports mimeographed in advance of Council meetings, and a copy sent to the members of the Council so that they may be familiar with the content of the agenda, before the meeting.

Your committee wishes to call attention to that part of the report in which the Secretary quotes from the report of the Illinois Department of Public Health, in which is reported a material reduction in maternal and infant mortality (lowest ever reported in our state) placing Illinois in maternal and infant deaths far below the nation's average.

Your reference committee agrees with the Secretary that every member of the House of Delegates should visit the Hall of Health.

In the report of the Secretary are reported the names of several past officers and past members of the House of Delegates, who have passed away during the last year. Your Committee feels it incumbent upon itself to report the names and to request that the President of the Society ask the House of Delegates to rise in silence for one minute in memory of our past associates.

L. H. Nickerson, Past President, Quincy, Ill.

C. A. Earle, Vice-President, Des Plaines, Ill.

T. D. Doan, Palmyra, Ill.

C. D. Snively, Ipava, Ill.

Edward Bowe, Jacksonville, Ill.

Shirley W. Lane, Kankakee, Ill.

We are certain the Secretary is correct in the statement that we have one of the best systems and sets of records to be found among the State Medical Societies.

Your reference committee notes with gratification that our membership is near 8,000 (7,819).

Relative to the financial report of the Secretary, your reference committee feels that the financial report shows care on the part of the Secretary and all other officers of the Society.

Treasurer's Report: The Treasurer's report indicates efficiency in the office of the Treasurer as well as efficiency on the parts of the officers of the Society.

Report of Chairman of the Council: Your reference committee notes the increased efficiency of the conduct of the meetings of the Council so that the vast increase of work may be more expeditiously handled.

Your committee was pleased to note the change in the activity of the Medico-Legal Committee, that is, that the Committee now functions as a personal assistance to the distressed member. Parenthetically, your committee is pleased to see that the number of lawsuits filed during the past year has decreased in number.

We note with gratification that the question of aid to the aged, indigent doctor is being further studied.

While the report of the Chairman of the Council must of necessity be a report of the action of many committees, the report shows a very knowing grasp of the problems of medicine.

Your committee was pleased to receive the supplementary report on the subject of income tax for the Society.

Also, the committee was pleased to know that the auditor of the Society was to appear before this House of Delegates to discuss the tax and social security situation.

Respectfully submitted,

Richard Greening,

Charles H. Hulick,

G. Henry Mundt, Chairman.

(Each portion of the Reference Committee's report was adopted as read.)

Dr. Mundt: I move the adoption of the report as a whole. (Motion seconded by Dr. Charles B. Reed, Chicago, and carried.)

REPORT OF COMMITTEE ON COUNCILORS' REPORTS

Presented by L. O. Frech, Decatur.

For the sake of brevity, your Committee deems it expedient to coordinate the reports of all the Councilors.

We wish to comment on the high lights of each report for the sake of emphasis and review.

We appreciate the fact that a State Councilor has, with all the present complexities of medicine, a big job to fill, especially one who assumes his office with a desire for fulfilling his obligations to medicine. To be elected a Councilor is one thing; to be a Councilor is another.

We feel that the State Society is fortunate in having men of high caliber on its Council. We also feel that our Councilors have been on the job, and will continue so.

The *Crippled Children's Clinic* is an organized humane effort which offers a measure of relief to those too helpless, in most cases, because of distance from orthopedic surgeons and because of either low or no private income. We feel it a noble effort which should be encouraged by the Council. However, where competent men are available, their services should be utilized.

The care of the *Indigent* is a problem so diversified and so affected by location, attitude of physicians and laymen, reaction of the indigent, cooperation or lack of it by relief authorities that it becomes, partially at least, a community problem. Some very good plans are in operation in communities for handling the situation and a very fair job is being done by those plans. The State Society must interest itself, as well as the County Society, in working out or assisting in formulae which will take the burden of relief off the private physician.

The *Woman's Field Army on Cancer Control* is a noble effort in an organized way. It should be supported by medicine, but only as long as it is an edu-

cational endeavor. Cancer is still, and will remain a medical problem.

Maternal Welfare as now organized must be supported by medicine, both organized and individual for the reason that it is a program for improving the technique of obstetrics, saving human life, preventing suffering, avoiding impairment and lowering statistics. We may now be good obstetricians, but we will never be quite good enough.

Group Hospitalization is about to grow up. It no longer takes its nourishment with a spoon. We no longer need to sit up nights worrying about its ill effects. It now dresses itself. But we must be wary that it does not become so big and strong that it will turn and overwhelm us. Hospitalization is only *housing* and *nursing* sick folks, medicine is *diagnosis* and *treatment* of patients. The two must not be confused by either doctor or layman.

Membership in Medical Societies as given in one Councilor report, for the Fourth District, probably runs parallel for other districts. In this district the membership is 76.8 per cent of the physicians in this district. We believe that it should, in all districts, be much higher than it is. How can it be done? You tell us.

One Councilor feels that the agitation against medicine from Washington has not hurt physicians from the lay standpoint. Your Committee begs to differ with the Councilor on this point, as we feel that it has greatly increased distrust of the laymen, both for opinions of physicians and organized medicine.

The work of our Legislative Chairman was mentioned in one report. No praise can be too high for this gentleman, who so thoroughly knows his job and who so diplomatically handles it.

One complaint was made regarding too little time for business meetings in the component societies. It is true that business, important business, is crowded out by scientific medicine and this should not be. However, we feel that it is one of the Councilor's duties to see that his component societies do not let this occur.

The report of collection of indigent fees from Supervisors, as relating to transients, shows that some medical men are learning their rights under the law. It is our impression that fees for any indigent work can always be collected from Supervisors, without an order, providing the patient is not on work relief, is a resident of the County and the service is an emergency one.

Immunization, pre-school and pre-natal work is primarily a function of the private physician. So long as private physicians recognize and perform this duty, it will remain a function of private medicine.

Public health and prevention being fundamentally the proper ways of maintaining health of the population, the natural assumption is that private physicians will cooperate in assuming these duties, which are naturally their obligations. With the high degree of Public Health function, the psychologic appeal and the state of health mindedness of the public as they are today, private physicians must not ignore these obligations,

for if they do, these duties will be, through compulsion, performed by others than the private practitioner.

One Councilor hopes that the House of Delegates will take some action regarding the care of the needy, aged members of the medical profession. Your committee wishes to express the opinion that a *proud* profession cannot sit idly by and see any of its once *proud* members accept ordinary relief as doled out by State charity. There are now, and will continue to be a few members of our profession, who through adverses and age, have been reduced to the status of need. We have been, and are now more charitable to needy laymen than to needy physicians. In this case, too, charity should begin at home. It will take so little from us who can afford it, and give so much to those who once gave so charitably to others.

Our Councilor reports, individually and collectively, show that these men are alert as to the needs of their respective societies, and to the profession. It is our hope that they will continue in the same efficient manner during the coming year for the Council is the rock upon which our house is built.

Respectfully submitted,

C. B. Ripley, Chairman,
O. Hawkinson,
L. O. Frech.

Dr. Frech: I move the adoption of this report. (Motion seconded by Dr. I. H. Neece, Decatur.)

The President: In reference to statement of the Committee concerning the man in charge of the crippled children's work in the state, I think it is Dr. Baxter's feeling that Dr. Harmon should not interfere with any action taken by the County Society.

(Motion to adopt report carried.)

COMMITTEE ON REPORTS OF STANDING COMMITTEES

Presented by Robert H. Hayes, Chicago.

The Committee to report on Standing Committees wishes to submit the following with recommendations:

Public Relations Committee: This Committee is to be commended for interceding and adjusting the many complaints and legitimate claims between complaining physicians versus industry and insurance companies. Also, for establishing harmonious relations with those concerned by outlining uniform fee schedules, applicable to the fair compensation to the physician for just claims and suitable to the usual medical charges in the particular community. We recommend a careful itemized statement of all accounts when anything controversial arises, which statement should conform to the usual charges in that community.

(Dr. Hayes moved the adoption of this portion of the report. Motion seconded by Dr. Charles B. Reed, Chicago, and carried.)

Medico-Legal Committee: This committee has been under severe handicap, since the ruling by the House of Delegates that financial defense for members is un-

lawful. Nevertheless, this Committee has reviewed over half a hundred threatened or instituted malpractice cases and by their careful analysis, including interviews with the physicians and the complainants, have caused litigation to be dropped with the result that only seven suits have been instituted and nine remain questionable. We feel this is most credible service. This service has well paid the members of this Society for maintaining the Committee, which has operated at a nominal cost per capita of less than 35 cents per members.

We wish to suggest that there be printed in the ILLINOIS MEDICAL JOURNAL an abstract of the duties of the Medico-Legal Committee; that the members of the Society may acquire a better understanding of its function. We further advise that the Committee publish from time to time, in the JOURNAL, facts concerning malpractice, malpractice insurance, and approximate rates for same. We also recommend that all physicians carry necessary medical protective insurance.

(Dr. Hayes moved the adoption of this portion of the report. Motion seconded by Dr. W. E. Kittler, Rochelle, and carried.)

Legislative Committee: Gentlemen, we do not feel qualified to discuss the merits or demerits of this Committee. However, too much cannot be said in commendation for the untiring efforts which Dr. John Neal and this Committee have manifested to not only keep the profession cognizant of the hordes of bills in both the State Senate and House, but also of National legislation, which would be detrimental to the profession and the public. We must recognize the time and effort in appearing before the several legislative bodies to outline in a gentlemanly manner the necessity of maintaining the high standards of education now in force so that the health and well-being of the public should be, as it now is, well guarded by the present medical practice act.

We beg to suggest that as individuals in the profession, we may do much to assist our Legislative Committee by cooperating with them, when solicited to do so by the Committee and not take it upon ourselves, as individuals, to contact or write members of the Legislature until called upon to do so. We feel that the Committee is better qualified to outline the approach and that we, as members, should only then answer their requests. The card system of approval or disapproval of legislative affairs, as designated by the decision of the Committee, should be continued and should receive our whole-hearted support.

(Dr. Hayes moved the adoption of this portion of the report. Motion seconded by Dr. Charles B. Reed, Chicago, and carried.)

Medical Education and Hospitals: It is perhaps regrettable that the Committee has seen fit to comment unfavorably on the situation of the withdrawal of approval to the Cook County Hospital without enumerating more specifically the personalities involved. Inasmuch as the hospital was fully approved for years and only recently had that approval withdrawn since which

time many unquestionable improvements have been made that the standards as required by the American Medical Association may be met and maintained.

The blemish of disapproval stigmatizes the personnel of the medical staff, all of whom are outstanding in the medical world and of whom approximately 75 per cent are professors or teachers in our recognized medical colleges where they have already taught the present interns. We believe one should pause before condemning the whole situation. Let us consider that this is a public hospital, tax supported and subjected to the decisions of the Board of County Commissioners, who not being physicians are over-cautious at times in adopting the suggested policies and changes, which are necessary in a medical way to meet the requirements of the American Medical Association.

We do not recommend approval of the National Health Program as outlined by the inter-departmental Committees in Washington. We are of the opinion that in the State of Illinois, with the hospital situation well taken care of, with perhaps, the exception of a few remote, sparsely populated counties. That the State Department of Public Health and State Department of Public Welfare are ably cooperating with the medical profession to promote the proper program of intensive public instruction and education concerning preventable disease. We recommend that the necessity for the future construction of hospitals and sanatoriums, either public or private, should be well considered as to the need for such only after a properly conducted survey of the district, county, city or town, to be served has been made. We also recommend that the Illinois State Medical Society, through the County Medical Society, institute a survey of health conditions in the counties of the state so that a state-wide program may be inaugurated under the joint auspices of the Illinois State Medical Society, Illinois State Department of Public Health, and the Illinois Department of Public Welfare, and that funds for this survey be appropriated by this Society. We further recommend that a program for hospital insurance, medical insurance, diagnostic clinics, and all other medical problems should be under control of the medical profession and conform to the ethics, rules, and regulations of the American Medical Association, that all plans may eventually be for the greatest benefit to the public and not be under control or the dominance of the State or National Government.

(Dr. Hayes moved the adoption of this portion of the report. Motion seconded by Dr. W. E. Kittler, Rochelle, and carried.)

Respectfully submitted,

Robert H. Hayes, Chairman,
Chester C. Guy,
L. S. Reavley.

Dr. Hayes: I move the adoption of the report as a whole. (Motion seconded by Dr. E. S. Hamilton, Kankakee, and carried.)

COMMITTEE ON REPORTS OF COUNCIL COMMITTEES

COMMITTEE "A"

Presented by Mather Pfeiffenberger, Alton.

Your reference committee has reviewed the reports of the following committees:

Educational Committee: Your reference committee heartily endorses the entire report of the Educational Committee and wishes to commend them on their excellent work.

Scientific Service Committee: Your reference committee endorses the work of this committee and suggest that councilors in their annual visit acquaint their component societies of the advantages and benefits of this service, thereby extending same.

Medical Economics Committee: Your reference committee endorses the work of this committee and desires to particularly call to the attention of the members of the Illinois State Medical Society the importance of the third paragraph in reference to the health program in the so-called Wagner bill. If the profession intends to prevent the passage of that portion of the Wagner bill which is prejudicial to their future interests, they will display eternal vigilance by keeping in contact with their senators and congressman, stating their opposition.

Indigent Medical Care Committee: Your reference committee feels that this special committee on indigent medical care has had an enormous job and have had to sit by to witness the great waste of public funds in which there could have been a saving if differently handled. We heartily commend the committee in preserving the relationship between physician and patient in this colossal misuse of public funds.

Veterans' Service Committee: Your reference committee wishes to particularly commend this committee's action in their defeat of the Bloom Chiropodist Bill and also the efforts in regard to the Osteopathic resolution which was defeated in committee, both of these efforts maintaining the high standards and dignity of the Medical Corps. We further wish to recommend that this committee use every effort to induce veterans who are able to pay for medical service to do so and thus help to reduce the enormous load of medical care to the government.

Committee on Cancer: We recommend the efforts in the control of cancer and feel that this move by the organization of the Women's Field Army of the American Society for the Control of Cancer will require some very careful guidance and advice in order not to become a racket instead of an agent for public welfare.

Committee on Physical Therapy: Your reference committee wishes to commend the committee on Physical Therapy for the frankness of their report in stating that this type of therapy is still in somewhat of an undeveloped state. We feel that many of the claims made by commercial manufacturers of physical therapy equipment are extravagant. We further feel that this form of therapy has not been sufficiently developed to be a compulsory course in medical schools, but could be taught in conjunction with orthopedics and other re-

quired courses in which physical therapy may be of value.

Respectfully submitted,
Mather Pfeiffenberger, Chairman,
Tell Nelson,
Pliny R. Blodgett.

Dr. Pfeiffenberger: I move the adoption of the report as a whole. (Motion seconded by Dr. J. S. Templeton, Pinckneyville, and carried.)

COMMITTEE "B"

Presented by G. R. Ingram, Champaign.

We, the undersigned Committee, appointed by the Chairman of the House to review the reports of the following Council Committees: Scientific Exhibits Committee, Constitution and By-Laws Committee, Syphilis Control Committee, Corporation Practice Committee, Fifty Year Club Committee, Maternal Welfare Committee, Mental Hygiene Committee, and Occupational Disease Committee, desire to announce that we have carefully reviewed these various reports. Many of them represent the continued interesting activities of several committees that have been doing an excellent piece of work in their various fields for a number of years. A few are new enterprises that are constructive, some of which are educational and pertain to improving public health activities as well as prevention, thereby reflecting credit upon members of the medical profession. In reference to the report on corporate practice of medicine, we believe this to be a problem that is a growing menace in many urban and metropolitan areas where they seriously affect many physicians in private practice in those communities to say nothing of the kind of medical service rendered by such corporations. We believe this Committee should be supported in their activities they have taken and encouraged to proceed to an early solution to this problem. We wish to commend these reports to the House of Delegates and recommend their concurrence in this report.

Respectfully submitted,
A. E. Walters,
G. R. Ingram,
C. H. Phifer, Chairman.

Dr. Ingram: I move the adoption of this report. (Motion seconded by Dr. Charles B. Reed, Chicago, and carried.)

COMMITTEE ON SCIENTIFIC WORK, SOCIAL SECURITY WORK, REPORT OF EDITOR

Presented by H. P. Saunders, Chicago.

Scientific Work: Careful study of work done by various sections indicates a need for insistence that section officers start all programs on time so they can run strictly on schedule, that these section officers should insist that speakers notify them in advance of intention of showing slides, movies or specimens and that provision be made to show them properly, such as proper facilities to darken the room, provide pointers,

amplifiers, etc. The oration on surgery was held in a room improperly darkened so that the speaker's slides lost much of their value. Excellent material of inestimable educational value is provided in these sections and should be presented to their best advantage.

Your committee feels that the quality of material presented in various sections is rapidly improving.

Social Security Work: The Committee on Economics and the Educational Committee are both doing wonderful work in handling the ever-increasing number of problems arising in regard to Social Security work. They furnish excellent material and speakers for organizations interested in this work.

Scientific Exhibits and Hall of Health: These exhibits are of ever-increasing value. The artistic work of exhibitors in preparing posters, movies, slides, and specimens, show constant improvement as to quality and attractiveness.

The Hall of Health is rapidly growing and becoming one of the greatest educational factors of our Convention. It attracts hundreds of lay people who are interested in medicine as it affects them and their community, giving the profession a golden opportunity for proper educational work. It should certainly be continued and enlarged. The essay and poster contests for high school children on "The Family Doctor" is extremely important as an educational medium. It is unfortunate that these exhibits had to be so scattered and some of them shown in such inaccessible places.

Report of the Editor: Our Society has been exceptionally fortunate through the years in having in its service an Editor who constantly and insistently warned our members of the increasing dangers of Socialized Medicine, in spite of our profession's mental lethargy and unappreciation of his prophetic counsel. If our membership would unanimously remain ever mindful of his two dicta that the "Price of liberty is eternal vigilance," and that "There can be but one master in the house of medicine and that is the doctor himself," many of the catastrophes which threaten our profession would expire of asphyxia neonatorum.

The Department of Medical Economics incorporated in the JOURNAL and conducted by its Department Editors, should be continued.

Respectfully submitted,
J. W. Stevens,
Hugh A. Beam,
H. P. Saunders, Chairman.

Dr. Saunders: I move the adoption of this report as a whole. (Motion seconded by Dr. Charles B. Reed, Chicago, and carried.)

Dr. W. E. Kittler, Rochelle: I do not think this is the way to adopt this report. The least we can do is to give Dr. C. J. Whalen and every member of the Economics Committee a rising vote of thanks and I so move. (Motion seconded by Dr. R. H. Hayes, Chicago, and carried.)

COMMITTEE ON RESOLUTIONS

Presented by N. S. Davis, III, Chicago.

1. *Amendment to Constitution and By-Laws*
(See Page 53)

Your Committee recommends that Article 4, Section 3 of the Constitution be amended in accordance with the recommendations of the Committee on Constitution and By-Laws to read:

Section 3. Members. The members of this Society must hold the degree of Doctor of Medicine or its equivalent, be members in good standing of the component societies, and *Citizens of the United States*.

Dr. Davis: I move the adoption of this resolution. (Motion seconded by Dr. R. H. Hayes, Chicago, and carried.)

2. *Rental of Radium*
(See Page 52)

Your Committee recommends the approval of the resolution presented by the Adams County Medical Society, and the concurrence in its recommendation.

Dr. Davis: I move the adoption of the resolution. (Motion seconded by Dr. J. S. Templeton, Pinckneyville, and carried.)

Dr. E. S. Hamilton, Kankakee: I suggest that a copy of this resolution be sent to our delegate to the American Medical Association.

3. *Improvement of Facilities for Postgraduate Study*
(See Page 53)

Your Committee believes that systematic courses for postgraduate study should be developed under the auspices of the Illinois State Medical Society. Such courses might be given in part in the teaching institutions and in part as extension courses in the Councilor Districts of the State. As the preparation of such program does not fit properly into the duties of any of the standing or councilor committees of the Society, it is believed that a special committee should be appointed to study plans in operation or under consideration by other state societies and prepare plans for such postgraduate teaching in Illinois. It is suggested that the Committee on Medical Education and Hospitals, the Educational Committee, the Scientific Service Committee, the Maternal Welfare Committee, and the Department of Public Health of the State of Illinois might be represented on this special committee as all might make contributions toward the development of such a program and in putting it in operation. It is, therefore, recommended that the resolution be approved and that a joint committee be appointed to report at the next meeting of the House of Delegates on this subject.

Dr. Davis: I move that this resolution be adopted. (Motion seconded by Dr. J. W. Long, Robinson, and carried.)

4. *Medical Licensure*
(See Page 53)

Your Committee believes that this resolution should be divided into two parts, one pertaining to graduates of unapproved medical schools, and one to graduates of

foreign medical schools. It, therefore, submits the following as substitute resolutions:

Whereas, the Council on Medical Education and Hospitals of the American Medical Association shows that in 1938, 187 graduates of schools not approved by the A. M. A. were licensed to practice in the United States, of whom 60, almost one-third, were licensed to practice in Illinois.

And whereas, this report shows that during the five years, 1934, 1935, 1936, 1937, and 1938, 866 graduates of unapproved schools were licensed in the United States, of whom 326, or over 38 per cent, were registered in Illinois.

And whereas, more graduates of unapproved schools were licensed in Illinois in 1938 than in any other state.

And whereas, the percentage of failures among graduates of unapproved schools in Illinois was 6.2 per cent and in the country as a whole 47 per cent.

And whereas, this situation is and has been embarrassing not only to the members of the medical profession in Illinois, but also and more especially to the members of the Board of Medical Examiners of the Department of Registration and Education of the State of Illinois.

Be it resolved, that it is the sense of the House of Delegates of the Illinois State Medical Society that these facts should be called to the attention of the Governor of the State of Illinois, the President of its Senate, the Speaker of its House of Representatives, the Director of its Department of Registration and Education, and to the State Board of Medical Examiners, with a recommendation that rules be promulgated or, if necessary, laws enacted, that will make it impossible for graduates of medical schools that do not meet standards equal to those of the American Medical Association for acceptable medical schools, to be examined for licenses in Illinois.

Dr. Davis: I move the adoption of this resolution. (Motion seconded by Dr. Andy Hall, Mount Vernon, and carried.)

Resolution No. 4 B

Whereas, 22 states, territories and possessions of the United States require full citizenship, and 16 others require first papers as a requisite for registration, Illinois is listed as having neither of these qualifications in 1939, at least insofar as reciprocity is concerned.

And whereas, 1,166 graduates of foreign medical schools (not including Canadian schools) were examined for licensure in the United States in 1938, with 38.6 per cent of failures, 55 such graduates were examined in Illinois with only 12 per cent failures.

And whereas, if it were not for the requirement of a one year's internship or residency before taking the examination in Illinois, many more graduates of foreign schools would take the examinations for licensure in this state.

And whereas, the foreign medical schools in question have not been examined by the Department of Registration and Education or other accrediting bodies in the United States in recent years.

Be it resolved, that the House of Delegates of the

Illinois State Medical Society in meeting assembled on May 4, 1939, in Rockford recommend:

That this situation be called to the attention of the Governor of the State and the Director of the Department of Registration and Education with a request that the Department drop from their list of accredited medical schools, as recommended by its Board of Medical Examiners, all foreign medical schools.

Be it further resolved, that the Governor of the State of Illinois, the President of its Senate, the Speaker of its House of Representatives, the Director of its Department of Registration and Education, and its Board of Medical Examiners be apprised of this situation and informed that in the interest of the people rules be promulgated, or, if necessary, laws enacted that will admit to licensure only citizens of the United States.

Your Committee recommends the adoption of the resolution presented by Dr. Hall as modified to separate the portions pertaining to graduates of schools not acceptable to the American Medical Association from those pertaining to graduates of foreign schools.

Dr. Davis: I move the adoption of this resolution. (Motion seconded by Dr. W. E. Kittler, Rochelle, and carried.)

5. *Organization of a Woman's Auxiliary to the County Medical Society*

(See Page 54)

The Committee recommends the approval of the resolution presented by the Woman's Auxiliary of the Illinois State Medical Society and the concurrence in its recommendations.

Dr. Davis: I move the adoption of this resolution. (Seconded by Dr. W. E. Kittler, Rochelle, and carried.)

6. *Establishment of a State-Wide Plan for Diphtheria Prevention*

(See Page 54)

Your Committee is under the impression that the department of Public Health of the State of Illinois working with the local health officials and with the whole-hearted cooperation of the members of the medical profession has been for some years conducting a campaign for the complete eradication of diphtheria among children of school age. More effective methods may be devised for carrying on this work which should be expanded to include immunization of children of pre-school age. Your Committee approves in principle this resolution and recommends that it be referred to the Committee on Relations to the Public Health Administration.

Dr. Davis: I move that the recommendation of the Committee be concurred in. (Motion seconded by Dr. Charles B. Reed, Chicago, and carried.)

7. *Death of Dr. L. H. Nickerson*

Whereas, Divine Providence has removed from our midst a highly revered and valuable member of the Illinois State Medical Society, Dr. L. H. Nickerson, who devoted fifty-eight years of his life to humanity and organized medicine, and who served as president of his local county, and State Society, and who was

highly esteemed in the community in which he lived as a citizen.

Be it hereby resolved, that we, the members of the House of Delegates of the Illinois State Medical Society, assembled at Rockford, Illinois, do realize our great loss and wish to extend to his family our sincere regrets at their loss, and extend to them our great sympathy.

Be it further resolved, that this resolution be spread upon our minutes and a copy of the same be sent to the bereaved family.

Dr. Davis: Your Committee recommends the adoption of this resolution and concurrence in its recommendation, and I so move. (Motion seconded by Dr. Charles B. Reed, Chicago, and carried.)

8. *Special Committee to Study Voluntary Sickness Insurance Plans*

The Belleville Branch of the St. Clair County Medical Society instructed its delegate, Dr. G. C. Otrich, to introduce a resolution as follows:

Be it resolved, that a special committee be appointed to study the voluntary sickness insurance plans being developed by the constituent and component societies of the American Medical Association with the view of submitting to the Council, a plan for sickness insurance in Illinois.

Be it further resolved, that when the Council has approved such plan it be submitted to a regular or special meeting of the House of Delegates for its consideration.

Be it further resolved, that when the Council has approved such plan it be submitted to a regular or special meeting of the House of Delegates for its consideration.

Your Committee feels that careful consideration should be given to this subject but is of the opinion that it should be referred to the Medical Economics Committee rather than to a special committee and therefore recommends that the Economics Committee undertake the study of sickness insurance and the preparation of a plan for such insurance in Illinois in accordance with the recommendations contained in this resolution and with the resolutions of the House of Delegates of the American Medical Association at its special meeting in Chicago in September, 1938.

Dr. Davis: I move that the resolution be referred to the Committee on Medical Economics. (Motion seconded by Dr. E. H. Weld, and carried.)

9. *Exhibition of Films Portraying Medical or Surgical Procedures to Lay Groups*

This resolution was presented by the Ethical Relations Committee, Dr. Charles B. Reed, Chairman.

Whereas, in the Principles of Medical Ethics, it states, Article 1, Chapter 3, and Section 4, "that the solicitation of patients by physicians as individuals, or collectively as groups by whatever name these be called or by institutions or organizations or advertisements or by personal communications is unprofessional," and

further, "by indirect advertisements," and yet further "to employ any method to gain attention of the public for the purpose of obtaining patients," and

Whereas, the exhibitors of films portraying medical or surgical procedures to lay groups by individuals, hospitals and commercial concerns are constantly increasing in numbers and in widespread distribution, and

Whereas, these pictures while officially exploited as educational in character are in reality utilized for the advertisement of individuals, hospitals, and commercial products, and therefore

Be it resolved, that the exhibition of such films to lay groups shall first be approved by exhibition of the film to the County or State Society or a Board of Censors thereof, and,

Be it further resolved, that exhibitors violating the provisions of these resolutions shall be considered unethical.

Dr. Davis: I move the adoption of this resolution. (Motion seconded by Dr. E. H. Weld, Rockford.)

Dr. L. O. Frech, Decatur: Should there be included in that, by others than the Public Health Department?

Dr. Davis: They do not have individuals named.

(Motion carried.)

10. Resolution of Appreciation to Rockford

Whereas, the Winnebago County Medical Society, the Mayor of Rockford and official groups, all organizations, hotels and the people in general in the City of Rockford have worked hard to make this 99th annual meeting a highly successful one; the fine work of our Chairman of the Committee on Arrangements has been an important factor.

Be it resolved, that the House of Delegates authorize the Secretary to send letter of appreciation to all those who have cooperated in this fine work.

Dr. Davis: I move the adoption of this report. (Motion seconded by Dr. L. E. Day, Chicago, and carried.)

Dr. Robert H. Hayes, Chicago: I would like to amend the original motion of recommendation of the Reference Committee on reports of Standing Committees, to the effect, that a copy of the report of the Committee on Medical Education and Hospitals together with a copy of the Reference Committee's report be sent to each member of the Committee on Medical Education and Hospitals of the American Medical Association. (Motion seconded by Dr. L. O. Frech, Decatur, and carried unanimously.)

COMMITTEE ON MISCELLANEOUS BUSINESS

Presented by C. W. Carter, Clinton.

The only item of miscellaneous business referred to this Committee has been the matter of the need for a new building to house the Army Medical Library. Particulars in regard to this need were given in a letter

from Dr. Woodward to Dr. Camp and read by Dr. Camp to the first session of this House of Delegates.

Your Committee on Miscellaneous Business has prepared the following resolution:

Whereas, the seventy-fifth Congress of the United States passed an act authorizing the Secretary of War to construct a building to replace the old and inadequate Army Medical Library and Museum Building, which was approved by the President, June 15, 1938, but for which no appropriation was made, and

Whereas, the Army Medical Library is a priceless collection of material of increasing value and use to the profession of medicine. Therefore be it

Resolved, by the House of Delegates of the Illinois State Medical Society that the present Congress be urged to make the needed appropriation for the construction of the building already authorized; that the officers and Council of the Society be instructed to follow the matter through to a conclusion, and that the President of the United States, the Secretary of War, the Director of the Budget, and all members of Congress from Illinois be informed of this action.

Respectfully submitted,

C. W. Carter, Chairman,

G. E. Johnson.

C. M. Flemming.

Dr. Carter: I move the adoption of the report. (Motion seconded by Dr. Charles B. Reed, Chicago, and carried.)

The President: The Secretary has no unfinished business, so we will proceed to new business.

Dr. N. S. Davis, III, Chicago: The Committee on Awards wishes to make the following report:

HALL OF HEALTH

Silver Medal: H. E. Fisher, L. H. Ruttenberg, J. L. Bailen, and E. C. Fisher: "Night Hazards of Driving."

Bronze Medal: Rockford Police Department: "Accident Prevention, Accident Investigation, and First Aid Bureau."

Bronze Medal: Department of Health, Rockford Board of Education: "School Health in Rockford."

Certificates of Merit: Department of Public Health, Rockford: "The Story of the Pneumococcus."

The Chicago Heart Association: "Prevention of Heart Disease Is Better Than Cure."

The Rockford Lions Club: "Sight Conservation and Blind Activities."

St. Anthony's Hospital, Rockford: "Pathological Specimens."

The Pittman Moore Company: "Medical Superstitions."

The Rockford Hospital Pathological and Nursing Exhibit.

SCIENTIFIC EXHIBIT

Silver Medal: Departments of Pathology and Medicine of the University of Chicago and of Northwestern University, and the Department of Public Health of

the State of Illinois: "Pneumonia: Pathology, Pathogenesis, Modern Management, Control."

Bronze Medal: D. A. Bennett, Coleman Clinic, Canton: "Mesenteric Lymphadenitis."

Bronze Medal: T. E. Walsh, and P. R. Cannon: "Some Effects of Commonly Used Nasal Medications on the Lungs."

Certificates of Merit: H. E. Mock and J. L. Lindquist: "Skull Fracture and Cerebral Injuries."

R. B. Malcolm, L. Rossiter, E. Palmer, W. H. Cole: "Surgical Pathology of the Colon and Rectum and Its Relation to Operative Procedures."

R. E. Brackin: "Uretero-intestinal Anastomosis or Anastomosis of the Ureter with the Colon."

P. J. Melnick: "Changes in Tumors Implanted with Radon Seeds."

C. M. Epstein: "Fractures of the Facial Bones."
Illinois Radiological Society: "Gastro-intestinal X-Ray Studies."

Dr. L. O. Frech, Decatur: I move that the report of the Committee be adopted. (Motion seconded by Dr. W. C. Blaine, Tuscola, and carried.)

Dr. John S. Nagel, Chicago: I understand there is a new bill pending in Springfield. Perhaps Dr. Neal would tell us about it.

Dr. John R. Neal, Springfield: There was a bill introduced yesterday into the Legislature which would authorize corporations to practice medicine. I would ask this House of Delegates to instruct its Legislative Committee to oppose this bill.

Dr. J. S. Templeton: I move that the Legislative Committee be introduced to oppose this bill. (Motion seconded by many and carried.)

The President: The moment has come when I am to lay aside the gavel after my year of work. I want to thank you for the pleasure it has given me to work with you, for the pleasure it has given me this morning for the harmonious way in which you conducted the House of Delegates.

Dr. John S. Nagel, Chicago: I move that the House of Delegates extend a rising vote of thanks to the retiring President for the very courteous and efficient manner in which he has conducted the business of the House of Delegates. (Motion seconded by many and carried.)

The President: It is indeed a pleasure to turn over the authority to the President-elect, a man whom you have all known for a long time for his skilful work. It is a pleasure to turn the gavel of authority over to Dr. James H. Hutton, who will next year preside as your President.

Dr. Hutton: I, too, want to take this occasion to thank you for this honor you have conferred upon me. My hope is that in the coming year I may so conduct myself that I may have the support of all the members of the State Society.

Before adjourning, there is one thing on which I would like the guidance of this House, that is the question of whether the Hall of Health should be continued. I think the Council would like an expression from this House of Delegates.

Dr. H. P. Saunders, Chicago: As Chairman of the Committee who was appointed by your President to report on this Hall of Health, Dr. Beam, Dr. Stevens and I spent quite a lot of time there, and it would be surprising to you to know what a large attendance it drew. All through the day there were large crowds of people, including students and teachers, and the evening there were cars around the Armory for three blocks. In our report we recommended that the Hall of Health be continued. I would, therefore, move that the House of Delegates recommend to the Council that the Hall of Health be continued. (Motion seconded by Dr. T. B. Williamson, Mt. Vernon, and carried.)

On motion by Dr. L. O. Frech, Decatur, seconded by Dr. G. R. Ingram, Champaign, and carried, the House of Delegates adjourned *sine die* at 12:15 P. M.

IRON LUNG WAS FIRST INVENTED IN FRANCE

According to *Franco-Anglo-American Press Relations* the iron lung was first invented in France. The following quotation is of general interest.

Although the recent impetus given the use of the iron lung did not come from France, it is nevertheless a fact that the first iron lung was made in Paris about 1870, when France was in the throes of the Franco-Prussian War, by Henri Collin, maker of medical instruments on designs by Dr. Woillez of the Hôpital de la Charité. The firm of Collin et Cie still exists in the rue de l'Ecole de Médecine in the Latin Quarter, where medical publishers and surgery instrument shops are gathered about the Faculty of Medicine of the University of Paris, and here may be seen a model of Dr. Woillez's iron lung, strikingly similar to the new Brinker Respirator.

Dr. Jacques Le Mée of the American Hospital in Neuilly told the story of the invention in a radio talk which preceded a campaign to raise money for the purchase of iron lungs for France. He said that the iron lung invented by Dr. Woillez was first used in

Strasbourg in 1871. It was called a "spiophore" and was originally intended to provide artificial respiration for newly-born babies. Like the modern American iron lung, it was shaped like a cylinder in which the body of the patient was enclosed with the head protruding, but with the air pump worked by hand. As its efficiency therefore depended on the physical effort of another person, it was impossible to use it for an indefinite period without interruption as may now be done.

For a long time the only iron lung in France was in the American Hospital in Neuilly, but many others are now in the country. As a result of Dr. Le Mée's campaign two others were purchased for French hospitals, where they are being used specially for infantile paralysis cases in which respiration is difficult. Lord Nuffield, the noted British automobile manufacturer and philanthropist, gave one to the Queen Victoria Hospital at Mont Boron, Nice, and others have since been acquired elsewhere.

WHO PAYS?

The telephone bills paid in 1937 each concealed an average of \$9.91 in taxes.

One-sixth of the electric light bills went for taxes.

In the price of a bottle of milk of magnesia there were 94 manufacturers' taxes and 68 retailers' taxes.

The sales slip for a cotton dress covered 123 taxes.

Fifty-two taxes were included in the price of a loaf of bread.

A pair of overalls carried 148 taxes.

Hidden taxes follow one even to the grave. There are 167 taxes involved in dying. These do not include some 40 taxes paid in florists' bills and twice that number included in the charge for publishing the death notice.

No matter who takes the ride, the ultimate consumer pays the fare. "Taxes are paid in the sweat of every man who labors" is a true saying.

—Patchwork.

DOCTORS AREN'T VILLAINS

The indictment of members of the American Medical Association and local, Washington, D. C., physicians is certainly radical procedure. Grand Jury indictments charge that the associations are "monopolies in restraint of trade." The United States Department of Justice backs the prosecutions of the doctors.

During the year there has been a movement throughout the country in organizing group health associations. Those who joined have paid one or two dollars a month, which entitled them to medical and hospital services in case of illness. It is an old plan. The Washington medical society expelled some of the health association doctors for unethical conduct and practices. Instead of letting the doctors "fight it out" as they have done for a hundred years the Department of Justice invoked the processes of criminal laws.

The monopoly spotlight was turned from the big trusts and industrial concerns onto the doctors. The American Medical Association was evidently the target

because it included doctors from all over the country in its membership.

Indictment of these doctors seems like a very drastic and cocusy-performance as a prelude to a new national health movement. It naturally clouds the movement. The nation's doctors are intimately connected with the home life of the American people. Notwithstanding this fact they are indicted like deep-dyed villains. As a matter of fact there is no profession that stands higher in the estimation of the American public than our doctors.

—An Editorial in THE KATONAH RECORD,
January 6, 1939.

THE SAMUEL D. GROSS PRIZE: FIFTEEN HUNDRED DOLLARS

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding 150 printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 South Twenty-second Street, Philadelphia, "on or before January 1, 1940.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

THE GERMS OF CHILDHOOD

How dear to my health are the germs of childhood

When thoughts of infection present them to view,
The coccus, the microbe that growing so wild would
Suggest prophylaxis, if anyone knew.

The wide-spreading pond, with malaria in it,

The bridge and the streams with typhoid as well,
The bed in the woodshed with everything on it,

The horrid old bucket that hung in the well,
The noxious old bucket, the septiferous bucket,

Bacteria bucket that hung in the well.

—Anonymous.

Original Articles

WOUND INFECTION AND COMPOUND FRACTURES

H. WINNETT ORR, M. D.,

LINCOLN, NEBR.

Mr. President, Ladies and Gentlemen of the Medical Society of Illinois:

It is a great privilege to address any remarks upon a surgical subject to this Society. Among your members you have now and have had many famous surgeons and teachers. The centers in which important surgery is being practiced and taught have been moving westward from Berlin, Paris and London for a long time. At present we may say that Illinois—and Chicago—is well within the circle that includes the leading teachers and schools of surgery.

In the particular branch of practice in which some of us are interested you have many prominent teachers at the present time. As we read the history of your Society and of this specialty in Illinois, we should pay special tribute to some of our predecessors in this territory. Dr. Edmund Andrews of Chicago was one of the founders of Lind, now Northwestern University Medical School. Dr. Andrews made many contributions to the literature and to the practice of surgery in diseases of the joints and spine and to methods of treatment for the prevention and correction of deformities.

His papers and works were published fifty years ago, not only in national journals and in the middle-west, but were accepted even in Boston—the Athens of Orthopedic Surgery.

A contemporary of Dr. Andrews, Dr. David Prince of Jacksonville, was a specialist in traumatic and orthopedic surgery in Illinois for forty-seven years. Soon after he came here he was the first in Illinois to administer ether to a patient for a surgical operation. His reports on plastic and orthopedic surgery to the Illinois Medical Society in 1864 to 1871 were published as a text-book and used as such for many years.

The work of Dr. Nicholas Senn is so well known to all that no words of mine could add to his standing among you. His achievements in "Surgery of the Bones and Joints" were of such a character and covered so wide a field that

his writings are read everywhere, even at the present time.

Alongside of Dr. Senn, successful both as contemporary and competitor, respected by all for his qualities as a scholar and a surgeon, was Dr. Christian Fenger. Many of you remember him as a teacher and consultant. He gave us many valuable lessons in diagnosis, pathology and operative technique. Even the generation just past, which included the dramatic star of Illinois Surgery, Dr. John B. Murphy, owed a great debt to these men.

To all of us, Dr. Murphy and Dr. John Ridlon made outstanding and permanent direct contributions. Many of those who write on orthopedics, bone and joint surgery and the surgery of fractures at the present time repeat, unconsciously or otherwise, teachings established by the pioneers to whom I have referred. Perhaps we should read even our recent history more carefully. It might persuade many contributors to so-called modern literature to rewrite or not to write at all papers upon these subjects which are being printed in our contemporary journals.

Certainly, it is by adhering to the principles and to many of the methods of practice of men like Prince, Senn, Murphy and Ridlon and by combining their techniques that we may hope to improve and carry on from their attainments.

With this introduction, I appear before you today as the advocate of a special method of dealing with wound infections and compound fractures. If you will consider my suggestions carefully, you will find that the plan of treatment which I propose is entirely consistent with my introductory remarks. Neither the general plan nor the details which I employ are in contradiction with the principles taught by your distinguished professors in Illinois. Rather, they represent, as I have suggested, a combination of certain features of their practice which I consider essential if we are to obtain the best results in this difficult class of cases.

The two major points in my argument are that local and general wound complications are due, first, to secondary mixed infection, caused most often by frequent dressings, and, second, metastasis of infection, the result of damage to the wound surface and irritation and aggravation of inflammation by improper motion and activity in the injured part. These difficulties are commonly blamed on the patient, but they

are more often due to failure on the part of the surgeon, whose duty it is to protect the patient even against himself.

We do not take the compound fracture situation as seriously as we should. For one reason, the actual results of our care of patients with these and similar infections is seldom known.

So many of these patients drift from one surgeon to another, or from the hospital to somewhere else that our statistics have seldom given us a correct impression of the real situation.

Figures from the military draft of 1917 afford us some data on this subject. Of the two million men examined in the draft, one-fourth were physically unfit for military service. Disabilities in the lower extremity, most of which were the result of wounds or fractures, led to the rejection of 40,000 men. Of those rejected, 5,500 had mal-union following fracture; 7,700 more were rejected because of shortening of the leg; 8,600 were rejected because of loss of the lower extremity.

A large group of 12,000 men were rejected because of other lower extremity defects. How many of these were due to fracture is not indicated in the tables. For wasting or atrophy of the limb, 5,000 were rejected, leading to a total of 40,000. All of these men were thus unavailable for military service because of fractures, injuries, amputations and defects of the lower extremity.

In considering disability and deaths following compound fractures, I was attracted to the interesting study made by Sir James Simpson on amputations about 1870. The comparison was of particular interest because of the similarity of mortality and disability percentages. Sir James Simpson showed that the death rate following major amputations was from 40% to 60%. He compared the results of amputations in city and country practice, in large and small hospitals, and even when done in the patients' homes. I shall refer to some of these points in detail.

In dealing with compound fractures of the femur during the last war, the British had a mortality of about 60% during 1914 and 1915. This high death rate was reduced very considerably during the next four years. It was generally believed that the influence of Sir Robert Jones and his associates had been of great importance in bringing about this change. They had introduced the practice of applying Thomas

traction splints on the battlefield. This was done by specially organized and equipped splint teams before transporting the patient to first aid or casualty clearing stations.

In 1920, Sir Anthony Bowlby gave the exact figures for patients of this class for 1918. He reported that of 3,000 patients, 550 or 17.5% died at the front. One-fourth of these were treated by amputation. Later, in the base hospitals, 300 more (10%) died of secondary complications and after amputations.

After their arrival in England and under treatment in the base hospitals, the death rate was 3%, so that the total in all cases was about one-third or 30%.

Our own experience as shown by the figures in the Surgeon-General's report in 1926 are of interest. 5,138 or 23% of all world war fractures were fractures of the femur. Eight years after the armistice, 2,469 or 48% were still more than 50% disabled. 1,122 had been amputated. Shortening of the limb was present in more than 2,000 or about 42% of all cases.

During 1918 and 1919 I had some contact with the majority of these patients. The hospital and professional care which they received in the base hospitals in France was well above the average that they would have received in civilian practice. A defect in treatment was that these patients were always treated with primary consideration for the treatment of the wound by antiseptic dressings or irrigations. The wound was operated upon, dressed and treated, while the position of the limb and the fracture were often neglected.

A point not generally appreciated was that the emergency use of the Thomas splint served not only to protect the patients against damage in transportation, but on a large general plan to provide immediate and correct early treatment. That is to say, the patient with a gun shot fracture of the leg or of the thigh had an emergency splint put on in such a way that all parts of the limb were restored at once to correct length and position. In this way the bones were placed in normal relationship and the soft parts, including the arteries, veins and nerves and even the lymph channels, adjusted so that resumption of physiological function in the limb was possible. When this is done, the patient is able to set up his natural defenses against infection

because pressure upon the nerves and interference with circulation are relieved.

All the functions which enter into the prevention of shock and resistance to infection are conserved in this way and the patient may inaugurate his processes of repair better than when the parts are not restored to correct relationship by immediate traction and immobilization in a proper splint.

Let us turn for a few moments to the other lessons taught by Sir James Simpson in his study of amputations seventy-five years ago. Then, as now, failure to make progress in that field of surgery was due to a mistaken satisfaction with the achievements of the period. Sir James called attention to the point that, while surgical methods and techniques had improved, and surgical teachings and practice were better than at any previous time in history, the death rate following amputations, especially in the cities and in the metropolitan institutions, was higher than in the smaller hospitals and in country practice.

He pointed out that those surgeons who had done a larger number of major amputations in small hospitals and in country practice had better results than were being obtained in city institutions. In the cities the death rate was higher, even when amputations were being done by more experienced surgeons because of the prevalence of suppurative complications and post-operative infections of all kinds.

The value of experience in surgical work, however, was shown by a study of country practice. In 370 cases of thigh and leg amputations done by surgeons with less than six cases, there was a death rate of 20%. In the same kind of country practice, surgeons who had operated more than six but less than twelve times, and in 916 cases, there was a death rate of only 14%. In 600 cases done by country surgeons with an experience of more than twelve major amputations, the death rate was still lower, or only 12%.

At the same time, in the Royal Infirmary at Edinburgh, in 371 thigh and leg amputations, most of them done by experienced surgeons, the death rate was 43% and in Glasgow 40%. Sir James Simpson studied 4,200 cases of amputation, and the average death rate in the large hospitals throughout the British Isles was more than 40%. The country practice average was about 20%. Sir Joseph Lister had just begun

at this time to call attention to the importance of the antiseptic method and in the course of a few years all case percentages were greatly changed by the adoption of the antiseptic and aseptic surgical techniques.

There are certain reasons why it seems unwise to assemble or present such data as are available regarding the results of the treatment of compound fractures in present day practice. The conclusions from such a study might be misunderstood or criticized. I may say, however, that they resemble in a striking way Sir James Simpson's tables and conclusions regarding amputations. The point to which I direct your attention, however, is that his suggestions regarding surgical practice have not been generally adopted. If we compare his figures with those for compound fractures now, we should gain by applying the lessons he taught to the treatment of these similar and important cases.

I am able to say from having observed the work of many surgeons that special experience, special equipment, and the prevention of post-operative infection by the program I propose will yield a higher percentage of good results than can possibly be obtained in any other way.

There is still a feeling in some quarters that irrigation and wet dressing methods for the care of compound fractures are satisfactory and results as good as can be expected. The statistics for the war period have not, however, been improved upon in most hospitals, and especially in the larger hospitals. Any devoted doctor or surgeon by personal skill and constant attention may obtain a good result in a compound fracture with Hodgen splint, weight and pulley traction, or even sand bags and frequent dressings. Good results have been obtained with such treatment. For general application, however, these are not successful methods. Weight and pulley traction, the Hodgen splint, and even the Thomas splint should be abandoned now, except as emergency expedients, in favor of fixed traction in plaster of Paris casts.

Continuity of treatment by the attending surgeon himself is of the greatest importance in these cases. In the large hospitals, where nurses are off duty two hours every day, a half day every week, and every other Sunday, and where internes and residents are off duty more than that, where the attending surgeon sees his patient only occasionally, or perhaps even only at

operation, weight and pulley traction, sand bag fixation, Thomas splint and frequent dressing methods are not efficient for this class of cases.

The efficiency claimed for such large institutions applies chiefly to the administration, operating room and x-ray and laboratory departments,—not to what may be called the clinical side of the institution. Adequate primary reduction and maintenance of the reduced fracture in correct length and position are considerations in the treatment of compound fractures for which there is no substitute whatever.

The point I wish to make is that in the large hospitals, division of responsibility, loss of continuity of treatment, and lack of personal interest in the individual patient is a danger. The large, busy, and supposedly efficient city hospital is very likely to fall short on this account. Especially in the care of *compound fracture* patients, this tendency indicates a defect that may be inherent also in any government program for the wholesale care of the sick or injured by a profession regimented under a national scheme.

At the time of the war, it had still not become customary for patients with compound fractures and other severely infected wounds to be referred promptly to surgeons of special experience. Nor had wound infections been brought under control. In the military hospitals, however, special staffs were soon provided and with the advent of the Carrel-Dakin method a cure for sepsis was believed to have been found. Yet the death rate and disability continued to be high, as the Surgeon-General's figures show.

The lessons of the war were not (as was claimed by some) that highly technical antiseptic methods would cure infection, that moving septic joints could be cured with motion or that primary or secondary closure was the treatment of choice for soiled wounds. Neither, finally could pyemia and septicemia be cured by intravenous chemical therapy (mercurochrome). Though now something just like that is being tried again.

Instead it was then, and is now, my conclusion that the war lesson was that with inadequate reduction of compound fractures, and with frequent traumatization of wounds by frequent dressings, local and general septic complications were encouraged and the healing of wounds and fractures prevented or delayed.

These were the considerations that influenced

me to employ, in 1921, a program of early reduction of compound fractures, skeletal fixation in plaster of Paris casts and infrequent dressings.

In my first efforts in this direction, I used the Thomas double abduction splint as taught by Sir Robert Jones. Skeletal traction was obtained by means of ice tongs to maintain length and position. I applied plaster of Paris to the feet on both sides and included the ice tongs on the injured side. From this it was a short step to the plan of pins in double leg casts or spicas which I have employed constantly for almost twenty years.

It was at the same time that I began to employ the infrequent dressing method. I abandoned splints and weight and pulley traction entirely and have employed double leg casts with pin fixation ever since.

I have discontinued the use of ice tongs and have not used Kirschner wires or other less efficient skeletal transfixion or fixation devices. It has been my experience that mechanical devices susceptible to adjustment by the patient, or by his attendants are, or become less efficient than transfixion pins incorporated in a plaster of Paris cast. Complete immobilization of the patient and his limb in plaster of Paris is the secret of success in the use of skeletal fixation.

Twelve years ago I treated a patient for Dr. Dudley of Seattle, Washington. We operated in Seattle on May 30, 1927. After a year of femur fracture in mal-position, osteomyelitis and imperfect union, this patient was placed upon the table, brought down to almost full length and correct position. This involved re-fracture through partial callus in the osteomyelitic area. We do this regularly and without hesitation in such cases. Adequate drainage was provided, skeletal fixation was employed and included in the double leg cast. The ice tongs which Dr. Dudley had already used were left in the femur and imbedded in the cast. Dr. Roger Anderson was present. This is the plan for which Dr. Anderson has since devised a splint and called well leg traction. This man progressed to satisfactory recovery in a few months time, and has continued to be well.

In a patient treated in Mexico City, with Dr. Farill two years ago, exactly the same procedure was employed. The patient was in even more serious condition. She had been in bed for over a year with mal-union of the femur just above

the knee. She had several draining sinuses and severe equinus deformity of the foot.

In her case, the draining sinuses were enlarged, skeletal traction was applied to bring the limb down to correct length and position, and by manipulation only, the femur was re-fractured through the osteomyelitic area. A tenotomy of the Achilles tendon was done to bring her foot to a right angle with the leg. This patient had no post-operative complications. She progressed to complete recovery in a few months and has been walking on the limb since that time.

These foreign patients are mentioned to indicate that one may operate safely upon such a case, enclose it in a cast with skeletal fixation and leave the patient without the apprehensions we used to have regarding flare-ups of infection. "Flare ups" are due to lack of drainage, failure to immobilize, secondary infection—any one or all three.

The points upon which we must insist and upon which we may depend are drainage, fixation and the prevention of post-operative infection. If pins are properly inserted and locked in the cast, they do not become loose, either in the bone or in the soft parts. There is no irritation, there is no necrosis of the bone, and there are no complications in connection with the use of the skeletal devices.

When a surgeon is called to attend a compound fracture with one or more large soiled wounds, he is confronted at once with several important anxieties regarding his patient. Haemorrhage, shock, pain, swelling, infection, deformity and disability. Treatment is usually directed to the prevention and control of haemorrhage, pain or shock. If these dangers have been taken care of then consideration is given to the fracture. Questions of debridement, wound closure and drainage are usually considered to be items of first importance. The point that I wish to make is that care of the details involved in the above often requires so much time and involves so much delay that the first fundamental of all fracture treatment is often overlooked. I refer to the reduction of the fracture. If the fragments of the bone are put back into proper relationship to each other, one restores at the same time the arteries and veins, the nerves and the lymph channels to correct relationship. In any damaged limb the earliest possible return of correct physiology is a matter of the greatest importance.

During the European war the injunction to "splint them where they lie" became an accepted admonition for all compound fractures. But the point not generally appreciated is that this measure saves lives and limbs, not only as a protective expedient but because it adopts for the first time as a general measure the plan of immediate reduction of the fracture and all of the parts involved in the fracture region. Actually what is done in the emergency application of a splint to a compound fracture is to restore the parts to proper relationship for relief of pain, prevention of haemorrhage and shock, and for all the other purposes that the proper reduction and care of a fracture implies.

Sometime ago I had an interesting clinical account from Dr. Calvin Smyth, Jr., of Philadelphia:

Sam Brown, age 50, a colored man, employed as a stevedore, sustained a compound comminuted fracture of the femur just above the knee joint, when a heavy packing case fell on him. In addition to the fracture of the femur he sustained fracture of the nose, the maxilla, and multiple lacerations of the face. He was in profound shock upon admission. The upper fragment of the femur was protruding through his overalls. After instituting measures for the relief of shock, the wound on the outer aspect of the thigh was flooded with iodine and covered with a sterile dressing.

During the first twenty-four hours his condition was such as to warrant nothing beyond temporary extension in a Thomas splint. At the end of this time, under local anesthesia the wound was systematically cleaned out, the protruding bone replaced and the wound packed lightly with iodoform gauze. Tongs extension was applied and the limb suspended in the Thomas splint from a Balkan frame in the usual manner. Plaster was not applied on account of the necessity of using tongs and we had at that time no experience with Orr's plan of incorporating the tongs in the plaster, thereby maintaining fixed traction. The wound was not dressed and bedside X-ray at the end of the fourth day showed that the displacement of the lower fragment had been overcome and although there were fourteen fragments present, the alignment was excellent. During the following three weeks the wound was not disturbed by any sort of dressing and the patient had no elevation of temperature whatever. During the fourth week, the House Officer, becoming alarmed by the odor of the dressing, removed the packing, swabbed the wound with mercurochrome and repacked with plain gauze. On the following day the temperature rose sharply to 103° and from that point the patient was septic and developed an extensive cellulitis of the thigh which required multiple operations for relief. Union of the fracture, however, occurred but the infection in the depths of the wound prolonged hospitalization for many months.

Comment by Dr. Smyth: "This case serves to demonstrate an instance where early treatment was effectual, and in which infection appeared only after three weeks following the making of a meddlesome dressing. From our experience with other cases, we believe that had this man been in plaster and had not been dressed for five or six weeks, no infection would have taken place."

"The convalescence of these patients is in marked contrast to those treated by the more familiar methods which required frequent and painful dressings which not only were a source of dread to the patient, but which of necessity militated against adequate retention of the fracture of bones. Our observations of compound fractures has led to the strong conviction that the suppuration which is so frequently seen is the result of infection introduced at these dressings."

These are the considerations that have influenced me in my efforts since 1919 on behalf of early reduction of all compound fractures, skeletal fixation in plaster of Paris casts and infrequent dressings. I was impressed during the war days with the point that when early reduction and fixation had been obtained in a Thomas ring caliper splint applied to a gunshot fracture on the battle field, pain was relieved, shock was prevented, circulation was restored, swelling was minimized and even sepsis was brought under control.

Not only so, but upon arrival at the hospital, the primary organization became permanent, parliamentarily speaking, if debridement, drainage and skeletal fixation in correct position were added to the preliminary care.

Attempts to relieve pain and shock by hypodermic medication, by transfusions of blood, or by the introduction of fluids intravenously, by tying off vessels and by the other emergency expedients ordinarily resorted to are futile unless restoration of the injured parts and immobilization in correct anatomical position are provided at the same time.

The protection of the patient against pain, secondary hemorrhage, swelling and infection is necessarily and always bound up with the same set of activities that must be employed to "set his fracture."

It has been difficult to persuade some surgeons that the success of the infrequent dressing method depends, not upon the dressing or upon

its variations or modifications, but upon the combination of fundamental principles which may never be disregarded. Early correction of position so that the parts lie in anatomical relationship, adequate drainage of infected areas and immobilization "enforced, uninterrupted and prolonged" as insisted upon by Hugh Owen Thomas, must be combined to give the patient his best opportunity for recovery.

The inherent ability of every patient to defend himself against certain amounts of damage and infection must always be recognized in carrying out any plan of treatment in compound fractures. If these points are borne in mind at the beginning, as well as in the subsequent care of this class of patients, both the operation and the after-care become much simpler than by other methods in common use. Primary adequate drainage without rubber tubes, without sutured wounds and without the dressings that have to be changed every day, simplify the entire program.

With an injured limb entirely immobilized in correct length and position, the only indications for disturbance of the limb or patient are those familiar to every surgeon—swelling, rise of temperature, increased white blood cell count and local symptoms which point to the seat of surgical complications, if such complications occur.

Early in my experience in the treatment of these patients with infrequent dressings, I suggested consideration of this method for military surgery. I was told, however, even by the authorities in Washington, that my proposals were too revolutionary for consideration and too radical a departure from general surgical practice. My own experiences with gunshot wounds, convinced me long ago, however, that drainage and packing of compound fractures and skeletal fixation in plaster of Paris casts was just as feasible in gunshot fractures as in other infected wounds.

It has been a matter of some satisfaction to me, therefore, that recent communications from the military areas in Spain have borne out my views in regard to this matter.

Dr. J. Trueta Raspall, who was on duty in the vicinity of Barcelona and in Catalonia, wrote to me some months ago and sent a copy of his book on "The Treatment of War Fractures." This was published in Portuguese at Barcelona. He reported a large number of cases successfully treated by the methods which I have described.

Now I have just received another letter from Dr. Raspall written in London. He was obliged to leave the Barcelona area upon the entrance of General Franco. I can give you the information which he now conveys best by reading directly from his letter from London dated April 11, 1939:—

“Mr. Winnett Orr:

I am very grateful to you for your last letter. Here I am in London advertising your method which I used 1,073 times, out of which only six patients died. Soon there will appear in the *London Lancet* an article telling about the part I took in the Spanish War. Where being Director of Barcelona I had a big chance for putting into practice your method. In the army, where I insisted that the method should be used in all cases, the number of times that I put it into practice amounts to 10,000. The gas gangrene that made so many victims suffer at the beginning of the war, has now almost disappeared.

I am sorry that we had to leave in the possession of General Franco many of our important papers, x-rays, photographs, etc., which of course, will no longer be of any use to anybody.

I hope to convince my new associates in England of the value of this way of curing these cases, but if not, the worse for them and their country. I think that in the United States it will be easier to introduce this new technique to the army for all kinds of injuries.

My book will be translated soon into English, and I shall have it published in London. The possibility of a war breaking out in Europe makes it more necessary for the principles to be known.

In the name of the thousands of wounded Spanish who have benefitted so greatly by your help, and also in my name I send you these words of thanks.”

Dr. Raspall indicated in his book to how large an extent he had adopted the principle of immediate reduction of fractures, fixation by skeletal devices in casts, and the infrequent dressing method. A point of the greatest importance is his reference to the disappearance of gas gangrene. I have contended for many years, that the wide open packing of these wounds does away with that danger. It had been charged that putting in the vaseline pack might favor the development of tetanus and gas gangrene. That, however, has not been our experience. We

have had no gas cases where the adequate opening of the wound and packing the wound open with vaseline gauze was carried out.

Attempts to close these wounds, on the other hand, either by primary or secondary suture, or by drainage by means only of rubber tubes through small sinus-like openings, is a bid for such complications. It is my firm belief that the open method is safer for the patient in all such cases.

The following comments were made upon lantern slides shown during the address:

The following comments were made upon the slides presented by Dr. Orr.

A diagram taken from an Army manual indicates a femur fracture patient suspended in a Bradford frame. This is how the patient is supposed to look. What actually happens in most cases is that the weight and pulley traction fails to maintain length and there is loss of immobilization and control in the splint.

Here is a ward in one of the military hospitals in France indicating how these patients look. About 100 fracture patients were treated in that ward; 60 or 70% were not immobilized. The wounds were being irrigated with Carrel-Dakin solution. The ward had many cases of wound infection and suppuration.

The individual patient looks like this. He is sick. His fever goes up after every dressing. It is possible to treat a patient with a compound fracture in this way but when we do have such a patient get well we must admit that his recovery is largely due to his own efforts.

Here is a method of using plaster-paris which was common in those days. There is a fenestrated plaster cast and you can change the dressings as often as you want. Sir Robert Jones said he never used such casts and I think now he was right.

As a substitute for that program of splinting, designed to afford treatment for the wounds, I am going to ask you to consider my plan which involves, first, primary reduction of the fracture on the operating table, leaving the wound surgery until the leg is in proper position and length. A program of debridement and primary irrigations without immobilization of the injured limb in correct length and position involves a great deal of disturbance of the patient and is just as likely to contribute to shock as the original injury. Apply the extension device and then debride.

This slide indicates the use of pins in compound fractures. We always put in pins before or at the time that the wound is being treated on the operating table. The limb is brought down to full length, the pins are inserted, drainage provided for the wound, and the vaseline pack is put in. There is no occasion for disturbance after that time. I was asked several times this morning about keeping these areas dry. You can put dry gauze about the wound area as long as you

do not disturb the wound surface or the position of the limb.

It is a small matter to put in the pins. We put them in quickly with a small motor. Pins do not become loose if they are immobilized in the cast before the patient leaves the table.

This shows a patient being prepared for such an operation. He is put on the table and traction is applied to the foot as he goes to sleep. If ice tongs are employed, they are put on. In our cases they are incorporated in the cast and not used as an elastic traction device.

The foot is held until the adhesive plaster traction device or pins is incorporated in the cast. The limb is held steadily in the extended position until the plaster has set.

This is an x-ray of a case in which four pins were used. We do not hesitate to use two or even four pins. We try to immobilize all the fragments and include the ends of all pins in the plaster cast. They can be taken out without disturbing the patient at all.

This slide shows a compound fracture of the femur. I have letters from surgeons who say they are using this method but that they have sinuses. The answer is that they put in vaseline packs through a narrow tube-like opening.

The wound should be widely opened by means of retractors and packed with a saucer-like opening. This is especially important in the thigh. The air has access to it everywhere and the leakage is around the vaseline cone. Healing takes place from the bottom and gas infection and tetanus have been avoided.

Here is an actual case where a man came in with a compound fracture ten days old. In the Surgical Section yesterday I heard that debridement applies only if you can get these fractures within the first few hours. This method applies at any time whether in an hour or in ten days. The metal plate had to be taken out because it had been improperly applied.

This slide shows the kind of a pack to put in. A vaseline wick does not serve the purpose.

This shows the patient after he gets back to bed. In cooperative patients we do not use a body cast, simply a double leg cast with cross bars. The pins through the bones are locked in the cast so there is no motion or muscle spasm.

This girl came with two long plates in the femur, a wire, nine screws, and a severe infection ten weeks after the fracture. She had recovered from the acute infection. All the metal had to be taken out.

This shows her eventual result as far as the bone is concerned.

She was healed and had a good range of motion in the knee after ten months. She made a good recovery with good length. During the eight months under my care she had four surgical dressings.

Here is another girl with a compound fracture of both legs. She spent a year getting well. I had a letter from her recently. She is 29 years old and is going to have a baby next month.

This temperature chart is introduced to illustrate the

point that when you do have a rise in temperature following operation that temperature will nearly always subside if you give it time. You know you have done a good operation and the patient is all right.

When, however, your surgical experience and laboratory findings indicate that there is a complication, look for it somewhere else. This man had a compound fracture. He developed a popliteal abscess and when that was drained the temperature went down and stayed down.

ENDOCRINE DISORDERS FROM A PUBLIC HEALTH ASPECT

JAMES H. HUTTON, M. D.,

CHICAGO

It is a far cry from the time when endocrine disorders were regarded as strange, rare and peculiar syndromes seldom seen by the average practitioner to the point where they are regarded as of importance, even from a public health standpoint. As a matter of fact, endocrinopathies are among the commonest of human disorders and every man, regardless of his specialty, is confronted by many of them. Whether he recognizes and properly treats them is quite another question. Perhaps Dr. Needham invited me to appear before this Section because he saw neglected endocrinopathies among school children.

The field was originally dominated by the clinical endocrinologist—and the term was one of reproach—who was thought to exude an offensive array of bizarre theories. Shortly the experimentalist became the dominant figure. As an evolver of theories, strange, bizarre and complicated, he made the clinician look like a rank amateur. For several years it was very difficult for the clinician to get a hearing before bodies interested in endocrinology. The attention of these organizations was centered almost exclusively on the reports of animal experimentation.

There is lately a tendency, at least among experienced clinicians, to put more dependence in clinical observation and to be less frightened by the failure of these to agree at all times with the findings or lack of findings by the experimentalists. Furthermore, the results reported by one experimentalist are not always confirmed by others, or the explanation put forth at first may turn out not to be the correct one. It has

become evident also that results seen in experimental animals cannot always be duplicated in the human animal and clinical phenomena observed in the human animal cannot always be explained or duplicated in the laboratory. The menstrual headache, for example, is a pituitary affair and in most cases can be cured or prevented by extracts of the anterior lobe. It is doubtful if animal experimentation can ever duplicate this or explain it, but that is not important to the clinician in his recognition and treatment of it. All of these and other considerations have encouraged clinicians to give more serious consideration to their own observations. The history in some cases contributes extremely valuable data and the experimental field furnishes little to take its place.

The problem of recognizing and properly treating endocrine disorders is one to be solved by the health officer and the man in private practice. Each has his place. The health officer can probably go no further than tentative diagnosis and suggestion to patient or parents that further study be made and the necessary treatment instituted at once. Postponing treatment does no good and may do harm.

From the public health standpoint endocrinopathies may be studied as they occur in five different places: 1. school, 2. state institutions, penal and otherwise, 3. maternal and infant welfare campaigns, 4. industry, and 5. the home. In the home the health officer will have very limited opportunities for these observations, except perhaps in cities where the health department has established prenatal and infant welfare clinics.

The School Population. Next to endocrine disorders among mothers and babies, this is the earliest place to recognize them. Proper treatment should be instituted as soon as the diagnosis is made.

Goiter and its prevention by wholesale use of iodine has been discussed too voluminously to require any attention here.

Endocrine disorders that most often confront the health officer among the school population are as follows: hypothyroidism, hypopituitarism, hypogonadism and Froelich's syndrome.

A few easily recognized signs of endocrine disorder should attract the attention of the health officer and lead to a search for other evidence or warrant referring the child at once to the

family doctor. The Board of Health could well employ a consulting endocrinologist, who could be asked to see questionable cases. He might be more certain of his ground than the public health officer and so make definite recommendations to the private physician.

What should the health officer look for?

1. Abnormalities in height. Most often he will see children who are below average height, but occasionally a child is seen who is above normal height. One condition is as deserving of study as the other, but the short youngster can usually be more easily and satisfactorily treated. Lack of adequate growth should arouse the suspicion of pituitary or thyroid deficiency and so lead to a search for other signs of these disorders. Some of these will be discussed in the following paragraphs.

The child above normal in height may be a victim of hypogonadism or overabundance of the growth and shortage of the pituitary sex hormone. The recognition of these conditions is beyond the limits of the health officer, but such a child is entitled to a careful study by the family physician.

Sometimes infections either bring about a complete cessation of growth or greatly retard it. If records were kept from year to year of the children's height, this condition could be recognized within a few months after its onset. At the present time we are apt to see such youngsters years after the damage occurred and usually when it is too late to correct it.

2. Obesity. The larger part of juvenile obesity is due to pituitary or thyroid deficiency or a combination of the two. A child persistently overweight or who rapidly becomes obese after an infection should be investigated for this possibility. Records of the child's weight from year to year would enable the health officer to determine when the onset of obesity occurred. If after an infection, that fact would be good evidence that the obesity followed and was at least partly due to pituitary deficiency.

3. Genital abnormalities. Froelich's syndrome may be suspected if the child is obese and lacks adequate genital development. Further study will be needed to confirm the diagnosis, but those two features are enough to warrant referring the child to the family physician. The positive diagnosis can be made earlier and more easily in boys than in girls, but the school

physician should not be expected to make it in either sex.

Delay or precocious appearance of the menstrual periods indicates some endocrine malfunction. Delay in the appearance of the menses may occur in Froehlich's syndrome and also in other conditions. Girls who show menstrual abnormalities are entitled to a careful study of their endocrine make-up. This study should not be long delayed in the hope that "she will outgrow it."

4. Hair suit. An abnormal growth occurs in adrenal tumors, pineal tumors and arrhenoblastoma of the ovary. All of these conditions require considerable study to reach a diagnosis which may not be positive even then. Absence of a normal amount of hair occurs in hypothyroidism and some cases of pituitary insufficiency.

5. The Skin. Hypothyroidism may be strongly suspected from the condition of the skin, which is dry, cold, hairless and prone to chap badly in cold weather. In pituitary deficiency it is often thin, delicate and easily bruised.

6. The Teeth. These offer further evidence of endocrine disorder. In hypothyroidism they are slow in erupting, irregularly placed and of questionable quality and the gums may be soft and spongy. In hypopituitarism the teeth may appear early, are regularly placed but small and widely spaced much as in acromegaly. In this condition it would appear that the teeth are affected even more than the rest of the body by the growth deficiency. They are prone to early decay and fillings may be present as early as the eighth year.

7. Scholarship. Children who fail to keep up with their class may for aught I know come now to the doctor's attention. In addition to the usual search for adenoids, infected tonsils and defects of vision and hearing, the doctor should also look for signs of endocrine disorders. This should determine whether the child is of normal height, the condition of the skin, hair, nails and teeth, obesity, the condition of the genitalia, and whether goiter is present.

Youngsters who have been absent from school because of some infection, particularly mumps, measles or scarlet fever, should be watched to note the early signs of failing scholarship, the accumulation of obesity, the failure to continue growing at the normal rate, or failure of the

genitalia to develop normally. It should be remembered that these infections have a predilection for the pituitary. Early signs of its deficiency may be obesity and a failure to maintain the previous level of scholarship.

So far as our present knowledge goes, behavior problems are not usually due to any endocrine dyscrasia. However, because of the tragic possibilities for such children, their endocrine make-up should be very carefully investigated. Precocious sexual development is probably the most obvious and most serious endocrine abnormality, as it may lead to trouble not only for the child himself but also for his family and for others. Sexual appetite may keep pace with sexual development and far outrun the child's intelligence or inhibitory capacity and so lead to criminal acts. Shy, timid, oversensitive children, especially those of high school age or beyond, may owe their condition to an underlying thyroid, adrenal or gonadal insufficiency. The positive recognition of this is outside the field of the school physician, but the condition itself warrants recommending a careful endocrine study unless more obvious explanations are easily found. Recent experience with behavior problems among clients of the relief administration raises the question as to whether nutritional deficiencies may not be responsible for some. Of course these may produce their effects by damaging some member of the endocrine family, but the obvious approach is by correcting the nutritional defects.

The health officer then will overlook few cases of endocrine disorder if he notes the height and weight of the child, the condition of the skin, hair, nails and teeth, in boys the condition of the genitalia and in girls the menstrual history or failure of menses to appear at the proper age.

In these days of enthusiastic maternal and infant welfare campaigns no attention has yet been paid to the endocrine side of this question. This is an important aspect of it. Sterile marriages are often due to some endocrine dyscrasia which in early years might be readily corrected. Habitual abortion is often due to pituitary or ovarian insufficiency and should be studied from that basis. Inability of mothers to nurse their babies is often not because of fashion, caprice or any lack of desire on the mother's part but is due to underlying pituitary dyscrasia. The usual measures to promote lactation fail to do

that but lead to obesity and a further crippling of the pituitary. Hypothyroidism in the mother may be suspected on the basis of excessive weight gain alone. Once the suspicion is aroused, other signs and symptoms can be sought for and proper treatment instituted at once. Parathyroid insufficiency may be suspected where the pregnant woman exhibits the following symptoms: muscular cramps, particularly in the legs, puffiness of the face, paresthesias and localized swelling of the limbs, pallor, thinning and loss of hair, dental caries, thinning and brittleness of the nails. All of these things could be readily determined in a prenatal clinic and should be taught in the maternal welfare campaigns. The overweight baby should arouse the suspicion of thyroid deficiency. Proper studies should be made at once to determine whether this is present. This may be outside the province of the health officer, but infant welfare stations should be on the lookout for these cases and refer them at once to the family physician. Certainly maternal and infant welfare campaigns should be broadened to include the endocrine aspects of the problems involved.

The State would be investing money wisely if it set up a research department for the prisons and mental institutions. Probably few among the prison population would be found who owed their difficulty to any endocrinopathy. These few are apt to be dangerous criminals who should be kept from society until their underlying endocrine disorder is corrected. If this is not possible, they should be permanently restrained.

Some years ago I saw in one of our prisons a young man of subnormal mentality, having an increased basal rate and hypertension. He had murdered a woman, but was in prison for rape. He was obviously a very dangerous person for whom little could be done but from whom society should have been protected indefinitely. However, the courts refused to consider medical opinions in the case and liberated him. Within ninety days after being freed he was guilty of another crime. It may well be that the health officer is as impotent as the rest of us in persuading courts to listen to medical opinion in such cases. Would it not be worthwhile to call a conference of representatives from the field of public health, private practice, the courts and the states' attorneys to discuss this and similar questions?

One has only to walk through the grounds and buildings of a state hospital for mental disorders to realize that endocrine disorders are much more prevalent there than among the civilian population. They are so numerous there that it seems not unreasonable to assume that they may have something to do with the mental or emotional upset of the patients. However, this causal relationship has not been established. Indeed it has not been carefully or extensively studied in this state. In these days of governmental extravagance it should be possible to finance adequately such a study. Unfortunately, it has not been possible thus far to arouse any great amount of interest along this line on the part of managing officers.

The late Dr. E. P. Sloan recorded an interesting case in this connection. There came under his observation a woman who had a feeble-minded child. In her second pregnancy she was given thyroid and was delivered of a normal baby. By a subsequent pregnancy during which no thyroid was given she delivered another feeble-minded child. Subsequently she gave birth to two more normal children by taking thyroid and iodine during her pregnancies. He also studied the inmates of one state institution and found that a considerable percentage of the feeble-minded came from mothers with hypothyroidism.

Industry. Now that industry has become part of the field of public health endocrine disorders among employees should be studied, as they may be primarily responsible for more obvious disorders. Endocrine dyscrasias are most likely to be encountered among those who are well above or below average height, who are obese, who are subject to industrial dermatoses or who have more than their share of accidents. The following two case histories are offered as examples of what might be accomplished.

Mr. A, locomotive engineer, had no complaints but was referred by his employing officer who accused him of sleeping on duty. He admitted somnolence, but denied being affected while on his engine. Repeated previous examinations were negative. The neurologist considered narcolepsy and advised that he be taken out of engine service.

Examination. Height 6 feet 3 inches; skin dry and cracked; hair of pituitary type of distribution (high on forehead with receding angles); teeth decalcified; nails brittle with spots and ridges; B.M.R. minus 19%; increased galactose tolerance. He reported his father

as tall and heavy and his mother short, indicating a hereditary pituitary factor.

Diagnosis. Pituitary and thyroid deficiency, based on height, condition of skin and appendages, family history, somnolence, which is characteristic of this type of pluriglandular disturbance, the basal metabolic rate, and the negative findings as to a non-endocrine cause for his complaints.

Treatment. Anterior pituitary and thyroid by mouth.

Result. Complete relief, somnolence disappeared in six weeks. Work now satisfactory to employing officer.

Mr. L, a locomotive engineer, age 72, complained of dyspnea and swelling of his feet for three years with pain and swelling of his abdomen for one year; vertigo and spots before his eyes and headache for the past few months. Diurnal somnolence was marked. Examination showed obesity (weight 222 pounds) of the thyropituitary pattern, distant heart tones with a systolic murmur over the aortic area, liver tenderness and a partial ventral hernia, narrow palpebral fissures, thin eyebrows and brittle nails. The blood pressure was right 186/90, left 180/80. There was a trace of albumin in the urine. Blood uric acid 5.5 mg.; cholesterol 195 mg. The basal metabolic rates had been minus 9.6% and plus 7%.

He was treated at first by rest, reduction diet and digitalis. This had no favorable effect on his complaints. Later, because of his obesity, diurnal somnolence, mental retardation, narrowing of the palpebral fissures, thin eyebrows, high uric acid and cholesterol, it was thought that he had a thyroid and pituitary deficiency. He was consequently given 5 minims of pituitrin. This was followed in the next forty minutes by a fall in blood pressure from 184/84 to 144/60. The following day the injection of 5 minims of antuitrin had a similar effect. He was then given 5 minims each of antuitrin (not antuitrin-S) and pituitrin daily, and one grain of thyroid per day. On this regime his blood pressure dropped to 125/80, his edema and symptoms were relieved and he lost 35 pounds in weight.

Women employees are said to average an absence of one day each month. This is largely due to menstrual abnormalities. Organizations employing large numbers of women could save themselves time and annoyance and their female employees a great deal of mental and physical discomfort by having these things carefully studied from the endocrine standpoint.

The health officer will rarely have the opportunity and should not be expected to make a positive diagnosis of many endocrine disorders. However, by keeping in mind a few easily recognized signs of these disorders, he can often be instrumental in seeing that a positive diagnosis is made and proper treatment instituted early. In this way he will be practicing preventive medicine.

DISCUSSION

Dr. Orville Barbour, Peoria: Dr. Hutton, in my opinion, has rendered a distinct and timely service in pointing out the prevalence of abnormal endocrine conditions and the need for something to be done about it. Such a general clinical problem might very well, I believe, be considered a problem of public health interest. It is a large enough therapeutic challenge to merit the combined efforts of the Public Health officials and the physicians in private practice.

As Dr. Hutton has suggested the Public Health Department can play an important part in cooperation with the practicing physicians by assisting in locating endocrine disorders in the field and in welfare clinics, and by arranging for active treatment when indicated. In this manner one may assist in restoring physically handicapped individuals to healthy useful citizens and at the same time will be helping to prevent the extension of endocrine abnormalities through the patients progeny to other generations.

The Public Health Officials can further assist toward the eradication of endocrine disorders by establishing an educational program in that direction. In this manner they may stimulate the interest of the practicing physicians in these clinical and therapeutic problems and thus help to create a worthwhile endocrine alertness in the profession. The Public Health Department may further assist through refresher courses in familiarizing the physicians with the physical signs and symptoms and the treatment thereof of various endocrine abnormalities. What is perhaps even more important, such an educational program could aid in the prevention of the occurrence of the endocrine disorders. Worthwhile contributions toward that end might be made by recalling to the profession and informing the laity of the hygienic and nutritional factors which are important in protecting the health of the endocrine organs and thus aid in preventing their dysfunction. For example, the pointing out of the essentialness of iodine in the goiter areas, other minerals, the vitamins, and certain other dietary factors in maintaining endocrine as well as general physiologic health.

Active and prophylactic treatment of endocrine disorders is of undoubted importance to the adult population, not only for its benefit directly but indirectly to future generations. It is with the age periods of active growth, however, when it is particularly important to have in mind the endocrine disorders and their disabling possibilities. The most crucial periods of all are those of the most rapid growth. These are represented by the fetus, the infant, and the adolescent.

One of the most vital times of all is during pregnancy, both for the mother and the child. There it is especially important to be on the lookout for signs of endocrine imbalance. It seems to me that examining for endocrine dysfunction is just as important to the welfare of the mother and child as are urine analyses and pelvic measurements, if not more so. Furthermore, in outlining maternal diets and hygiene one should keep in mind the adequate protection

and nutrition of the maternal and fetal endocrine organs as well as of the body as a whole.

Probably the next most vitally important age period is that of infancy. Here, one should endeavor to establish adequate nutrition so that endocrine dysfunction may not be permitted to interfere with the normal growth and development of the individual in the very beginning of extrauterine life.

While growth continues to take place throughout the whole of childhood an alert vigilance toward the endocrine health of the individual should not be relaxed. During the adolescent period it is again particularly important to watch for any signs of endocrine dysfunction, and to be extra careful of maintaining appropriate hygienic measures and adequate dietary protection of the active endocrine organs during that critical time.

To my mind, the more generally the new generations from inception on throughout the entire period of growth receive adequate prophylactic care and when indicated active therapy of their endocrine systems, that the more surely we may have hopes of finding less and less need for general endocrine vigilance than there is at the present date. It is my hope that Dr. Hutton's contribution may prove to be an effective step in that direction, at least in the State of Illinois.

Dr. Gerald M. Cline, Bloomington: I would like to say "Amen" to these ideas Dr. Hutton has brought to us. These are real problems ahead of us. The endocrine foundation of the child, if we may call it that, is most important in the completion of the actual structure of the adult-to-be. Furthermore, we must realize that this structural result is for all time to come; in other words, it is permanent.

Looking ahead, we as pediatricians and general practitioners, meeting the problem of the new born, the feeding problem of the infant, the immunization stories, the physical problems, and now the endocrine problems, certainly are brought to the realization of our importance in the final structural development of the child.

Question: "When are we going to have the perfect child?"

SOME PITFALLS OF ROENTGENOLOGICAL DIAGNOSIS

LAURENCE M. HILT, M. D.,

Butterworth Hospital,

GRAND RAPIDS, MICHIGAN

Sir William Osler once said, "No class of men needs friction so much as physicians; no class gets less. The daily round of a busy practitioner tends to develop an egoism of a most intense kind, to which there is no antidote. The few setbacks are forgotten, the mistakes are often buried, and ten years of successful work tend to make a man touchy, dogmatic, intolerant of

correction, and abominably self-centered. To this mental attitude the medical society is the best corrective, and a man misses a good part of his education who does not get knocked about a bit by his colleagues in discussions and criticisms."

Dr. Sosman has written, "May I emphasize here that there is no competition in the sense of antagonism but only the striving to do one's best in each case, to contribute as much as possible and to help in any way conceivable toward a correct diagnosis." May we add that personalities must be forgotten or forgiven, whichever the case may be, in order that the enthusiasm so necessary for proper diagnosis will not be diminished.

The necessity for an organized follow up plan in connection with radiological work is essential. Attendance at operations and post mortems will lessen one's self-esteem and stimulate the urge for the best in diagnosis. It is our practice to have a copy of the scheduled operations. The names are checked against the previous x-ray records of the last twelve months. In this manner we can tentatively plan our work so as to be present at some time during the operation. Thus one has an excellent check on his findings. The admitting office notifies the internes for post mortems; our department is also notified at the same time. These two methods have proven of value and can be adjusted for nearly any hospital, large or small.

Case 1. (Mrs. M. H.): A radiograph was made of the chest. We could see that the left breast had been removed. The heart is displaced to the left and would appear to be slightly enlarged. On inquiry it was found that the breast had been removed six years previous. It was felt that the shadow in the right lung might be due to metastasis. A definite fluid level was demonstrated in the right chest. The left diaphragm could not be outlined. During the period that this patient was under our observation, we thought that the shadow in the right lung was on a metastatic basis with fluid. She was given therapy as a palliative measure. The patient came to autopsy in about ten days. An empyema was found. There was no evidence of metastasis. A review of the history gave evidence that the temperature curve, blood count, and other physical findings were misinterpreted. It is true that metastasis does frequently occur in the chest after carcinoma of the breast, and can even occur in the opposite breast. The possibility of intercurrent infection was very pointedly demonstrated in this case.

Case 2: (Mr. R. A.): A radiograph of the chest was made with the patient in the prone position. The right diaphragm could be outlined, the right costo

phrenic angles were clear, and the lung markings on the right appeared to be within normal limits. The left diaphragm could not be definitely outlined. The upper portion of the mediastinum seemed to be pulled to the left, which suggested the possibility of an atelectasis. There was also a shingling of the ribs on this side, and some mottling throughout the lower two-thirds of the left chest, no evidence of fluid or a fractured rib. Without knowing the history, one would probably assume the patient had an infection in the left lung, probably a pneumonia. This patient had been in an accident. He died and came to autopsy; a hemothorax was found. Thus, this film illustrated the importance of knowing the clinical history. The film of the chest was made primarily to determine the presence of a fractured rib. The mottling was due to hemorrhage in the pleural cavity.

Case 3. (Mrs. N. W.): The patient was given barium by mouth. The stomach showed a large penetrating lesion on the lesser curvature side of the stomach which measures 2.5 cms. in diameter, and is irregular in outline. A review of the films made elsewhere a year ago shows this lesion present, but not noted. There is also definite spasm of the pylorus, and the duodenal bulb is not well filled. It was felt that this patient might have a combined lesion, that is, a duodenal ulcer as well as a penetrating lesion of the stomach. The size of the lesion which is not 100% criterion and also its irregularity suggests a neoplasm. Patient was sixty years of age. This gave added weight to our conclusions of a carcinoma. The patient came to operation. A resection was done. No evidence of a duodenal ulcer found. The surgeon examining the lesion before removal felt that it was carcinoma, although there were no palpable glands present. The pathologist was also present at that operation but did not make any definite commitments. Careful microscopic section reveals no evidence of a carcinoma. The irregularity of the lesion, also its size, which was noted previously, and the age of the patient were determining factors in making a diagnosis. The length of time this filling defect had persisted, and also that the patient had complained over a period of years, and also that malignant lesions of a penetrating type are usually located more distalward should have been given more consideration. It is evident it is impossible to definitely determine from the x-ray film whether some of these lesions are benign or malignant. Even after seeing and feeling, there is still room for doubt.

Case 4. (F. J.): A portable radiograph of the chest was made with the patient in the prone position. The patient was quite ill when examined. The diaphragm can be outlined on both sides, both costophrenic angles are clear. There is an apparent widening of the aorta. We felt that this might be due to an aneurism. The trachea is displaced slightly to the right. Emanating from the right hilum there was also some increased density. This might be due to an infectious process. The patient had an aneurism

in my opinion. A film was requested to be taken in the erect posture. In as much as this patient was very ill, it was found impossible. The patient died within forty-eight hours after admission. Post mortem showed an enormously dilated esophagus filled with blood. Aneurisms are always to be thought of in the widening of the upper mediastinum, especially to the right, in the possibility of tumor formation, and the condition such as found here should also be considered. One should not make a diagnosis until they have exhausted the various means possible.

Case 5. (F. H.): Radiographs were made of a man with a large abdomen which contained fluid. Peristaltic waves could be seen to be present. The pylorus and duodenal bulb were regular in outline. The stomach also appeared to be regular in outline. No constant filling defects were found. The presence of fluid in the abdomen did not aid in examination. At the end of six hours, the stomach was also practically empty. There was a straight line in the greater curvature side of the stomach which had a fixed appearance. A great deal of significance was not attached to this at the time of examination. A radiograph of the colon showed some downward displacement of the descending colon and also the contour suggested the possibility of a malignancy outside the gastro-intestinal tract. This patient died within a week and came to autopsy. A lymphosarcoma of the stomach was found with a widespread metastasis and fluid in the abdomen. We were acquainted with the history of this case and also palpated the abdominal mass. He was examined very carefully and it was felt that he did have a malignancy of the stomach but we were unable to prove this either fluoroscopically or by films. It is evident that we did not give sufficient weight to the fixed appearance of the stomach. It has been cited in the literature and when present should be called for re-examination, and if constant, is of value. Lympho-sarcoma of the stomach is quite rare. If this would have been recognized earlier, it is quite possible that irradiation might have prolonged the survival of this patient.

Case 6. (W. B.): A radiograph was made of the right radius and ulna. The patient had previous irradiation elsewhere over this area on suspicion of an Ewing's tumor. Following is our original report on first admission:

"Shows an area of bone destruction at the distal third of the right ulna about two inches from its distal end. Located on the medial surface of the ulna there is also a periosteum which is somewhat elevated. There is some evidence of bone repair in this region. I believe that the pathology is due to a sarcoma of bone most likely an Ewing's tumor."

This patient came to operation. A chronic osteomyelitis was found.

CONCLUSION

Post mortems and a careful "follow up" are of inestimable value.

THE ILLINOIS PNEUMONIA CONTROL PROGRAM

HOWARD A. LINDBERG, M. D.
CHICAGO

Public Health has been defined as the "art and science of preventing disease, prolonging life, and promoting physical and mental efficiency through organized community effort." For many years this work has been confined mainly to communicable disease; but, as in every other field of medicine, Public Health is progressing and broadening its scope to include many diseases outside of those that are definitely contagious. Each year more medical problems are recognized as belonging in the field of public health, and only by attacking them in this way is it possible to make headway in reducing the mortality and morbidity of the forces which make up the "Battalion of Death."

Only after Public Health measures were adopted was it possible to reduce to almost negligible figures, the number of deaths from typhoid fever, cholera, smallpox, and diphtheria. More recently, poliomyelitis and tuberculosis have been added to the list of community problems, and now that physicians, nurses, medical organizations and lay groups are making co-operative efforts in stamping out these diseases, their death rates, too, are declining each year. At the present time, concentrated efforts are being made to control venereal diseases, pneumonia and cancer; and certainly in the near future, heart and kidney disease must be treated in the same way.

It is interesting to note from the vital statistics for infectious diseases during the period of the past fifteen to twenty years that there has been a rapid decline in the number of deaths from typhoid fever, diphtheria, and tuberculosis. On the other hand, deaths from pneumonia—and it, too, is an infectious disease—have remained the same from year to year. What is still more important, these figures show an average of five thousand to seven thousand deaths in this state each year. If we examine the statistics further, we see that over 50% of these deaths occur in people between the ages of 15 and 65 years. People in this age group are of greatest economic importance, as they are the breadwinners of their families, and often have

a number of dependents. They are also important in the business world and share the burden of responsibility for the life of the community in which they live.



Figure 1. The mortality curves of infectious diseases in Illinois during the years 1920-1937 inclusive. Although there have been marked drops in the mortality curves of the other infectious diseases, the pneumonia curve remains unchanged.

Certainly the fact that pneumonia is a Public Health problem has been recognized. However, we have not realized until very recently that pneumonia is definitely a communicable disease. We have known too little about its epidemiology, nothing about its prevention, and only lately have there been developed adequate measures for its treatment. Pneumonia control as yet does not mean pneumonia prevention, but it does mean early diagnosis; and early, active, and vigorous specific treatment for each individual case. As we have learned to prevent other communicable diseases, we have every reason to believe that in the future we are going to be able to prevent pneumonia. But at present, only by the methods cited above are we able to make definite progress in reducing pneumonia mortality. By these methods alone we should be able to save over one thousand lives each year in Illinois.

Realizing the importance of this disease, the Illinois Department of Public Health, in conjunction with the United States Public Health Service, organized a Pneumonia Control Program in November of 1938. The Department

carries on this program with the aid of a Pneumonia Commission made up of members of the Department of Public Health, medical men from each of the four medical schools who are particularly interested in pneumonia, and practicing physicians and hospital authorities throughout the State. The plan and purpose of this program are as follows:

1. To establish easily available and adequate laboratory facilities for all physicians to obtain rapid, accurate bacteriological diagnosis.

2. Through standard laboratory technique, to study the epidemiological characteristics of pneumonia in Illinois.

3. To acquaint physicians and nurses with the newer methods of diagnosis and specific therapy.

4. To distribute antipneumococcic serum without cost, in so far as possible, to all patients with pneumonia, regardless of their financial status.

5. To acquaint the public with the seriousness of the diseases and the importance of getting early medical care.

6. To carry on research both clinically and in the experimental laboratory for the purpose of establishing the best methods of pneumonia treatment and control, and then incorporating them into this program.

By these means we can confidently expect to reduce mortality and morbidity from pneumonia.

1. The first step in carrying out this program was the establishing of a good state-wide laboratory service for bacteriological studies of pneumonia. Laboratory workers from all parts of the state were invited to attend a week's course on the bacteriology of pneumonia. This course was given without charge, and maintenance was paid by the State while the people were in attendance. One hundred and seventy-five laboratory workers received this training this season. Following the course, all laboratories in the state were contacted and asked if they wished to become approved to do pneumococcus typing. If such was desired, minimum requirements for approval were sent to them, followed by personal laboratory inspection and, when possible, performance tests. Flights of unknown specimens were then sent to these laboratories for typing and, if the results were satisfactory, the laboratories were officially approved. Typing from approved laboratories only is accepted for

the distribution of free antipneumococcic serum by the Department.

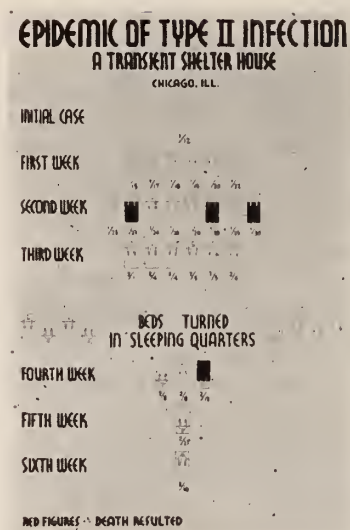


Figure 2. The spread of Type II pneumonia through a transient shelter house. Fifty cases of Type II pneumonia were reported from two houses situated within a few doors of each other and between which there is a constant interchange of transients.

2. Epidemiological work on pneumonia during this season has been confined to data on type incidence, and its relationship to age, sex, occupation, predisposing factors and population centers. Most of this data is in the process of being evaluated for further statistical information.

The pneumococcus carrier is a pertinent epidemiological problem, and it is hoped that this can be investigated during the coming season. Several incidences of the same type of pneumonia in families have been reported, as well as cross-infection on hospital wards, and from patient to the doctor and nurse in attendance. One epidemic of Type II infection occurred in a transient shelter house in Chicago in which eight hundred to a thousand men live in one dormitory. Fifty-odd cases of Type II pneumonia were reported between the third week in January and the first week in March. There were four deaths among these cases. The epidemic was apparently stopped simply by changing the arrangement of the beds. The knowledge obtained from our epidemiological studies will be used in promoting future pneumonia prevention as well as present pneumonia control.

3. The educational part of the Pneumonia Control Program so far has been confined mainly to the medical profession. To acquaint physicians throughout the state with the most recent concepts of diagnosis as well as the modern management of pneumonia has been its primary

observe many cases, under many circumstances, and in various phases of the disease. Complications of pneumonia and their treatment should be thoroughly understood.

Nursing education also is to be stressed during the coming season. In no other disease is it so important to have skilled and intelligent nursing care as it is in the treatment of pneumonia. The nurse's duty to the patient is to promote adequate rest, comfort and nutrition. Her duties to the physician include careful and constant observation and reporting of an ever-changing clinical picture of a treacherous disease. She also must have a thorough knowledge of the procedures of serum, oxygen and drug therapy, and physiological management. The public health nurse should know how to instruct families in nursing technique in caring for patients in homes, particularly in rural areas. The infectious nature of the disease should be thoroughly understood by all nurses and proper measures of precaution taken. Nursing education will be carried out by means of numerous nursing institutes held during the fall and early winter season. Home nursing and public health nursing will be stressed particularly.

The final part of the educational program is the pneumonia exhibit which is on display at the present time. This exhibit is a cooperative endeavor of the Departments of Medicine and Pathology of Northwestern University and the University of Chicago Medical Schools, the State Department of Health, and the Pneumonia Advisory Commission. It demonstrates as compactly and completely as possible the story of pneumonia from its pathogenesis and pathology through various phases of its treatment to its control as a public health problem. A small handbook covering this same material is now being written by the members of the Advisory Council, and will later be distributed by the State Department of Health.

4. During the present pneumonia season the State Department of Public Health distributed antipneumococcic serum for Types I, II, V, VII, IV, and VIII without cost to all patients with pneumonia regardless of their financial status. Only three requirements are necessary to obtain this serum: 1. that the typing be done in a laboratory approved by the state to do pneumococcus typing, 2. that the patient have had pneumonia less than ninety-six hours, and 3. that the



Figure 3. Locations of serum centers and typing stations that have been established during the 1938-1939 pneumonia season.

purpose. An attempt has also been made to familiarize them with the facilities of the Section of Pneumonia Control of the State Department of Public Health.

Symposia were held at twenty-five county medical society meetings this year at which the entire meeting was given to the discussion of pneumonia. Talks were given to various smaller medical and nursing groups and hospital staff conferences. In all, some sixty-three meetings covering thirty-five counties were held. In addition to this, articles on pneumonia and the Control Program have appeared in the various state and local medical journals.

Our program of education, however, must continue to expand. More meetings should be held, one- or two-day postgraduate, refresher courses should be given to aid physicians who wish to attend. This would make it possible for them not only to hear about the treatment of pneumonia but also to see a large number of cases under treatment. As the average practitioner usually sees only three or four pneumonia cases each year, he should be given an opportunity to

physician send in a complete report of the case. No restrictions were made as to the amount of serum dispensed although minimum dosages were recommended. The above mentioned types were distributed because of the fact that previous reports from other parts of the country indicated that serum for these types would likely take care of at least 75% of the pneumococcic pneumonias. As a result of our epidemiological studies, however, it was found that only about 50% of the pneumococcic pneumonias which occurred here were treatable by these types of serum. Fig. IV. During this season, serum was issued for 930 cases at an average cost of \$53 per patient.

PNEUMOCOCCUS TYPE INCIDENCE IN ILLINOIS

January - February - March - 1939

Type	No. of Cases	Per Cent	Type	No. of Cases	Per Cent
1	661	11.07	17	28	1.63
2	182	10.62	18	40	2.39
3	242	14.06	19	54	3.63
4	62	3.06	20	27	1.64
5	45	2.60	21	14	0.81
6	45	2.60	22	22	1.38
7	120	7.58	23	14	1.45
8	125	7.79	24	10	0.88
9	27	2.16	25	12	0.70
10	20	1.16	26		
11	25	1.46	27	4	0.23
12	10	1.08	28	17	0.99
13	19	1.08	29	24	1.40
14	30	1.75	30		
15	41	2.24	31	14	0.81
16	36	2.15	32	5	0.29
TOTAL			1,713	100 %	

Figure 4. Pneumococcus type incidence from sputum specimens submitted to the approved laboratories for typing through the months of January, February and March, 1939. N. B. These are not necessarily all cases of proven pneumonia.

A great deal of experimental work has been done on the use of antipneumococcic rabbit serum and because of its freedom from reactions, simplicity of administration, and greater effectiveness, it is likely that in the future the State will dispense rabbit serum entirely. It is hoped that by the coming pneumonia season that serum will be available for more types of pneumonia.

5. The fifth step in the development of this program has to do with the education of the general public. As yet, this point has not been stressed to its fullest extent since it has been considered more important first to acquaint physicians with the scope of the program. However, it must not be forgotten that if a physician is going to make an early diagnosis and give the adequate treatment, he must have an opportunity to see his patient early in the course of the illness. The public should have knowledge of

the emergency nature of pneumonia, the terrific mortality that it carries, the importance of hospital care, and active treatment in reducing this mortality. They should realize that pneumonia most frequently follows a common cold or influenza, and that its onset may be insidious. They should also realize that pneumonia is contagious and can be spread among families. If they understand these points, they will place themselves in the hands of their physicians early enough for proper care and treatment.

The Metropolitan Life Insurance film on pneumonia, "A New Day," has been shown in a large number of movie houses throughout the state. Exhibits on pneumonia have been held in public libraries, schools, and Y. M. C. A.'s. Several radio talks have been given and a small pamphlet has been published for general distribution. All of these methods have been used to acquaint the public with the fact that pneumonia is a serious disease with a high mortality rate, but if the physician is given a fair chance at treatment, it can be cured.

6. In conjunction with the above-mentioned steps, and as the final step in the pneumonia control program, a definite research program is well under way. This is vitally necessary if pneumonia is going to be treated as a Public Health Problem and as such to give the physicians the best possible service. Experimental work is being done in the State Health Department by the Division of Laboratories, and the Statistical Section. Investigations are also being carried out under the guidance of the members of the Advisory Commission in their own laboratories and in hospital wards.

In the laboratories of the Health Department, studies are being made on pneumococcus cultural methods, and laboratory tests for guiding the treatment of pneumonia. The effect of sulfanilamide and sulfapyridine on the typing and growth of the pneumococcus is also under investigation at the present time.

Statistical data is now being analyzed from laboratory reports and case histories of serum treated, untreated, and sulfanilamide treated pneumonias. This material has been sent to us through the cooperation of physicians throughout the state.

A great deal of work has been done this year on the comparison of horse and rabbit serum both as to technique of administration and results. Many clinical and experimental problems in oxy-

gen and chemotherapy are being worked out. The practical use and value of sulfapyridine in a pneumonia control program is a particularly pertinent problem at the present time. Before such a drug can be safely recommended for general usage, its indications, dosage control, probable effect, and toxic manifestations must be thoroughly understood.

As a result of this type of cooperative investigation, it will be possible to incorporate newer methods into the general pneumonia control program as soon as they prove practical. It is also hoped that as a result of these opportunities of research and access to statistical material that we may in some small way do our share in contributing to the ever-increasing knowledge of the control of pneumonia.

However, the aim of the Department of Public Health is to reduce pneumonia mortality in Illinois in the most efficient way possible. In order to do this, it is trying to give to the physicians of the state as much aid as possible both in the way of education and in placing in their hands the measures necessary for treatment. The success of such a program depends upon the continued interest and cooperation of all physicians for it is only in this way that we may hope for a drastic drop in the curve of pneumonia mortality.

DISCUSSION

Dr. H. J. Shaughnessy, Chicago: I think it is axiomatic that proper serum therapy in pneumonia can only be carried on with the aid of laboratory services. In looking at the problem of pneumonia control from a broader standpoint, we do not believe that any kind of pneumonia control can be achieved without good laboratory services. Thus, the status of such methods of therapy as sulfapyridine or its derivatives, which are now being used, or of serum plus chemotherapy can only be evaluated in relation to types of the infecting organisms. If typing is abandoned, as we fear it may be in some quarters, and chemotherapy is carried on blindly, we shall be a long time in weighing the relative values of serotherapy or chemotherapy or their combinations. Pneumonia caused by each of the specific types of pneumococcus is a distinct disease. I think we often lose sight of the fact that the disease caused by Type III pneumococcus is as distinct from pneumonia caused by Type I pneumococcus as Friedlander's bacillus pneumonia is from pneumococcus pneumonia. Therefore, we must study the effects of these various agents on pneumonia by types. I think it is quite possible we may find something like this after we get through with such a study; that in a given type, such as pneumonia due to Type I pneumococcus, the mortality

may be 8 to 10 per cent. with chemotherapy, it might be 4 to 6 per cent. with specific serotherapy, and as has been found in some series, only 2 to 3 per cent. with the combined serum and drug treatment. If that should prove true, the patient will have approximately three times as much chance of living if he gets the combined therapy as if he were given chemotherapy blindly. And we would be doing the patient a great injustice, of course, if chemotherapy were used without typing.

In some states the pneumonia control program was instituted without preparing for adequate laboratory services and, according to the reports that we receive, the results were pretty disastrous. These same states are now, in some cases, several years after their programs were started, going back to the stage that we used as our first step, that is, establishing laboratory services on firm ground, as Dr. Lindberg mentioned, as part of our pneumonia program. We feel that this program of training laboratory workers, which was carried on through the cooperation of the U. S. Public Health Service, which assigned an instructor for this work, has been of the greatest value. On check specimens sent out to the various laboratories in connection with our laboratory program, we find that the results were far better on this particular test than any of the other tests for which we have attempted to approve laboratories. The results have been really excellent.

We have another indication that the typing course was of value. Some laboratories attempted to become approved before they sent a representative to the course and we found they were unable to type. Then after some one from the laboratory had been at the typing school for a week, check specimens were again sent them and they were 100 per cent. correct in their typing.

I think there is still another indication of the value of the work, and that is the relatively small number of specimens referred to the super-typing stations for checking.

Through this scheme then we have been able in this first year of the program to approve some 118 laboratories for pneumococcal typing in the state, which we think is a pretty good record. About one-half of all known laboratories are approved for this test. As would be expected, we find there has been a tremendous increase in typing in the state. Through our own laboratories we have been interested in promoting typing for a good many years. We put on demonstrations in typing in the State Medical Society as long as five or six years ago, and the method of typing has been included in our manual for longer than that. But we got two or three specimens a year in each of our laboratories and that is all. Now we are getting several hundred a month in our two largest laboratories and we believe, from available figures, that there have been well over 2,500 typings done in all of the laboratories in the state since the program started about the middle of January.

We feel distinctly the need for further work. We adopted the Neufeld test and have promoted it all

along because we feel that it is a good minimum standard. In general it has worked very well. There are some common mistakes in connection with the test, however. We are putting out a little mimeographed circular which covers these matters which you can get at our exhibit booth if you are interested in it. We feel, however, that the Neufeld or capsule-swelling test should be supplemented by several others, and we hope to push these next year. Mouse inoculation certainly ought to be used with the Neufeld. Bullowa in New York does a mouse inoculation with every specimen, regardless of whether it types out immediately or not, because he may pick up additional types or the infecting organisms may be present in very small numbers and the one he sees in the Neufeld reaction is actually a carrier organism.

Cultures ought to be stressed, particularly in the case of children. We are getting some interesting experience in one of the larger children's hospitals in Chicago where they are submitting laryngeal swabs and we are typing them by Neufeld after culturing them in a special broth for three hours. Other microscopic tests, of course, ought to go along with the typing. We are finding a surprisingly high incidence of other infections. In a group of 60 sputums we had five tests positive for tubercle bacilli. These cases might not be picked up unless the acid-fast stain is done along with the Neufeld.

We feel that not enough blood culturing is being done at the present time in this State and we hope to get an increased amount of it done. If it is done, it should be done properly, of course. We have, we think a good control series in Chicago in one of the large hospitals. One part of the hospital is using a regular blood culture medium supplied by the hospital for general use. They are getting about 10 per cent. positive blood cultures in this part of the hospital. Dr. Lindberg, I think, is of the opinion that in many cases that are not finding a bacteremia when, from the clinical history, they should be. In another ward in the same hospital, where they are making up their own media and doing it with meticulous care, checking particularly the pH of the media, they are finding about 35 per cent. positive blood cultures. I think that illustrates the value of a good medium. Therefore, we are planning to distribute blood culture media routinely in rubber diaphragm bottles so that blood culturing will be stimulated.

I think that covers most of our difficulties except we have need of more approved laboratories in the southern and southeastern part of the state. But, the main point I want to stress is, we hope you all will do what you can to stimulate the continuation of typing so that chemotherapy will not supersede serotherapy without some substantial scientific basis, at least.

Dr. R. M. Bissekumer, Rockford: What is the accepted dosage of sulfapyridine, sixty, eighty or ninety grains per day?

Dr. Howard A. Lindberg, Chicago: The first dosage is usually two grams in 4 hours and 1 gram every

4 hours until temperature is normal, followed by another two gram dose and one gram every four hours, when the temperature is normal.

Dr. Bissekumer: The first day how many?

Dr. Lindberg: About eight to ten grams. The dosage runs between 25 and 40 grams for the whole case. I think it is important that after the temperature is normal to continue a maintenance dose of the drug for three or four days; in some cases, about a gram or gram and a half every six hours so that a relapse will not occur. The absorbing rate of sulfapyridine varies greatly: some persons will get a very high blood level of ten or fifteen with a very low dosage and another person will not absorb it well no matter what the dosage might be.

Dr. A. J. Levy, Chicago: In non-productive cough in cases of pneumonia, I would like to know whether there is any possibility of submitting to the laboratory swabs of the throat.

Dr. Shaughnessy: It is possible but we discourage it because it is, of course, difficult to type from such swabs. You should use laryngeal swabs and not the throat swabs.

THE ROLE OF CEVITAMIC ACID IN VARIOUS CLINICAL CONDITIONS

M. A. SPELLBERG, M. D.

From the Dept. of Medicine, University of Illinois College of Medicine

CHICAGO

Normal Requirements. The minimal amount of cevitic acid required per twenty-four hours to protect the average adult against the onset of scurvy has been considered by various workers to be approximately 30 mg.^{1, 2} This figure was arrived at by indirect methods and there are reasons to believe that it is fraught with danger. Such intake is only slightly above the 20 mg. which is considered the lower limit of average adult twenty-four hour excretion of the vitamin in the urine. This would obviously not allow for any "storage" nor is there much allowance for individual variations or unexpected emergencies. Also mere protection against scurvy does not necessarily entail physiologic normality. In the early experiments with pure cevitic acid in protecting guinea pigs against scurvy a daily dose of 1 mg. or even less was thought to be sufficient, later by the use of the incisor tooth method⁴ .6 mg. per 100 g. of body weight was found necessary to prevent any histologic changes in the teeth. The matter of individual variation of requirements was impressed upon us,

Read before Section on Medicine, Illinois State Medical Society, Rockford, May 2, 1939.

when we observed that a group of guinea pigs kept on a low vitamin C intake will show widely divergent reactions. Some of them die very quickly while others on the same intake will continue to thrive.

From these considerations the conclusion is warranted that 60 mg. per day or the equivalent of 4 oz. of orange juice is a safer minimum³ for the average adult, and 100 mg. per day is the preferable amount.

Infections. Because of the frequency of various infections in both clinical and experimental scurvy, the role of vitamin C in this group of conditions aroused a great deal of interest. Many different conditions caused by bacterial infection have been studied and all of these, with practically no exception, have showed decreased excretion of the vitamin in the urine, low blood plasma values, and poor response to saturation tests. The specific diseases studied included upper respiratory infections and pneumonias,^{5, 6, 7} tuberculosis,^{6, 8, 9} osteomyelitis,¹⁰ rheumatism,^{9, 11} diphtheria,^{12, 18} various toxemias,¹³ and also cystitis, typhus fever, scarlet fever, erysipelas, paratyphus infections and meningitis.¹² In acute conditions, such as pneumonia, which terminate with sudden drop of temperature and crisis, the excretion of cevitamic acid increases sharply immediately after the crisis. In the more chronic conditions the excretion of the vitamin increases gradually as the condition improves. This increased level of excretion is thought to be of possible use as an index of the clinical progress of the case, as has been pointed out in tuberculosis.

The finding of signs of deficiency in these conditions in spite of an adequate intake has challenged an explanation of the phenomenon. The tentative assumption is that since in febrile conditions metabolic processes go on at a greater speed, cevitamic is also metabolized or utilized with greater speed. This increased utilization has also been demonstrated in animal experiments by Harris and his associates.¹⁴ They showed that infection of guinea pigs with various pathogenic micro-organisms resulted in a decreased excretion of vitamin and decreased storage in the tissues.

Is there an etiological relationship between any infection and vitamin C deficiency, and does the vitamin play any specific therapeutic role in the treatment of infectious disease? This question aroused a good deal of speculation and argu-

ment. Rinehart¹¹ and associates contended that a vitamin C deficiency existed before the onset of rheumatic fever, and this deficiency made it possible for the organisms to invade the host in such a manner as to result in the disease entity known as rheumatic fever. There is, however, little evidence for this contention. That there is evidence of vitamin C deficiency in acute rheumatic fever is incontrovertible, but such deficiency exists in all other febrile conditions studied and is a result of the infection rather than its cause. This latter view finds support in a report by Keith and Hickman.¹⁵

A specific effect of cevitamic acid on bacteria or their products has been assiduously sought for. Steinbach and Klein¹⁶ found that guinea pigs receiving subcutaneous injections of vitamin C were able to survive larger doses of tuberculin. Van Gagy¹² showed that when diphtheria bacilli are incubated in the presence of vitamin C, their virulence was decreased and in some cases a destructive effect on the bacteria was noted. But the use of large doses of cevitamic acid in clinical diphtheria produced no favorable results with the exception of decreasing the frequency and severity of epistaxis.¹⁸

Another interesting relationship between vitamin C and immune reactions has been noted by Ecker¹⁹ and associates. These workers found a depression of complement function in guinea pig serum deficient in cevitamic acid and a rise in complement on addition of the vitamin in vivo and in vitro. These workers also found a decreased amount of complement in two scorbutic patients.⁴⁵ This rose to normal levels when the blood cevitamic acid reached 1 mg. per 100 cc. plasma. Whatever light future experiments may throw on this complex subject, this much is certain at present, that patients suffering from febrile conditions need more vitamin C than normal individuals, and this must be adequately supplied in order to give the organism the greatest possible physiological advantage.

Endocrine Conditions. The relation of cevitamic acid to cellular respiration and oxidation reduction reactions,^{20, 21, 22} led us to believe that there may be some disturbance of the metabolism of this substance in hyperthyroidism. The work of Mosonyi²³ threw some light on the subject. He found that guinea pigs rendered hyperthyroid by thyroid or thyroxin medication showed less storage of the vitamin in the tissues. Since he

did not do any urine studies on his animals he could not conclude whether it was due to increased excretion or increased utilization. The hyperthyroid patients studied by us consistently showed less cevitic acid excretion than our normal controls.⁴⁸ The latter showed 300 mg. or more in the urine on 400 mg. daily intake after saturation, but the hyperthyroid patients never reached that level. One patient was studied after thyroidectomy as well as before and her excretion rose to normal levels after surgery.

Malignancies. That some relation exists between vitamin C and experimental malignancies has been shown by a number of investigators.²⁴ Philadelphia No. 1 sarcoma, Jensen and Walker sarcomas and spontaneous mammary carcinoma were found to have increased reducing power which was due to the presence of large amounts of cevitic acid,^{41, 42, 43, 44} while benign tumors were shown to have a much lower reducing power. Vogelaar and Ehrlichman²⁵ claim that addition of cevitic acid to the culture media of Crocker mouse sarcoma, stimulates cell division and retards degeneration. These observations seem plausible, for we would expect rapidly growing malignant tissue to have a greater need for this substance which is so intimately connected with tissue metabolism.

The cases of malignancies that we studied yielded clinical evidence that rapidly growing malignancies showed an increase of cevitic acid utilization.⁴⁸ The cases we studied included gastric carcinoma, melanosarcoma and carcinoma of lung, they showed initial depletion and when saturation was obtained they never excreted as much as our normal controls. Two cases of suspected malignancy showed a normal response and were later proved to be benign conditions. Thus these observations may be useful from a diagnostic as well as a therapeutic point of view.

Blood Dyscrasias. Pernicious anemia was studied by a few investigators. Drigalski⁶ found no decreased excretion of cevitic acid in his cases of pernicious anemia and achlorhydria, and he concluded that the latter did not interfere with absorption of the vitamin. Grunke and Otto¹² found some pernicious anemia patients with low excretion and some high (60 mg. per twenty-four hours). Alt, Chin and Farmer²⁶ found low blood plasma concentration in their patients with pernicious anemia achylia, but evidence of poor absorption was found in only one of six cases.

The reason for the lowered blood concentration is not perfectly clear, there are reasons to believe that the achlorhydria is not the responsible factor.

Eufinger and Gaetgens²⁷ reported a favorable influence on the blood picture and clinical course of a case of leukemia by intravenous injections of cevitic acid. We studied in detail one afebrile case of myeloid leukemia. No favorable effect was noticed on the disease by saturating the patient to the point where more than 200 milligrams were excreted daily. However, the patient showed definite evidence of increased utilization. His stores were markedly depleted even though he had a normal intake and when saturation was attained he did not excrete as much as a normal control. The patient was studied after a thyroidectomy (done for another purpose) and though his basal metabolic rate decreased, his metabolism of cevitic acid showed similar behavior.

Peptic Ulcer. That patients on restricted peptic ulcer diets show evidence of vitamin C subnutrition has been determined by numerous investigators.^{6, 28, 29} But the question of etiological relationship between it and peptic ulcer and the bleeding of ulcers remains unsettled. Magee, Anderson, and McCallum³⁰ noted ulcerations of stomach and duodenum of cavies kept on deficient diet. But this was a multiple vitamin deficiency. In experimental scurvy of guinea pigs we noticed that a bloody diarrhea is a very common symptom. We also noted hemorrhages in the entire gastro-intestinal tract including the stomach, of these animals. Thinning of the stomach wall and ulcerations were also found. But there is a lack of evidence that these observations are in any way applicable to peptic ulcers in the human being. The best evidence we have points to the conclusion that deficiency develops after institution of ulcer therapy.

After deficiency of vitamin C develops, may this not lead to hemorrhage from the ulcerated area? Theoretically the answer is yes. But whether this is the only or even the most important cause of the bleeding is a very moot question. A favorable influence on the gastric and duodenal hemorrhage, from cevitic acid therapy has been noticed by some of the observers mentioned above and also by us. Chamberlain and Perkins,²⁹ however, found cevitic acid of no value in the therapy of peptic ulcer. One

point admits of no contradiction. The Sippy diet is deficient in vitamin C and hence should be supplemented either by pure cevitamic acid or fruit juices.

Keeping the gastric contents alkaline or neutral by medication does not seem to interfere with absorption.⁴⁸ It appears from our observations and the observations of Hawley and co-workers³¹ that alkaline salts seem to aid storage.

Allergy and Anaphylaxis. Among the most interesting recent contributions to the knowledge of vitamin C is its identification in large concentrations in the various endocrine glands, and especially in the adrenal.³² This gland contains a larger concentration of the vitamin than any other organ in the body. In the resting state the cortex of the gland has stronger reducing capacity but after anaphylactic shock, anger, ether or chloroform anesthesia or any emotional reactions that entail an increased secretion of adrenalin, the medulla showed greater reducing power. This reducing power has been shown to be due chiefly to the presence of reduced cevitamic acid.^{32, 33} These observations were suggestive of intimate relationship between the physiology of the adrenal gland and vitamin C, possibly in the mechanism of adrenalin secretion.

Do the conditions that are benefited by adrenalin, such as anaphylaxis and allergic diseases, have any definite relation to vitamin C nutrition? Wilkinson and Ashford³⁴ found their three cases of Addison's disease deficient in cevitamic acid, and suggest a possible relationship between the pigmentation in this disease and the lack of vitamin C. It has been mentioned before that vitamin C has been shown to have some protective effect on the guinea pig against tuberculin injections. Those animals dying from tuberculin showed depletion of reducing substance in the adrenals.¹⁶ Cormia³⁵ claimed that vitamin C deficient guinea pigs showed more intense reaction to arsphenamine than did the normal controls, and 22 animals given 50 mg. of cevitamic acid daily withstood 28 daily arsphenamine injections, but after that period they succumbed. Friend and Marquis³⁶ found normal blood plasma concentration of cevitamic acid in patients before and after arsphenamine therapy. Following a reaction, however, the blood level dropped to a very low point. They think this is the result of the arsphenamine reaction rather than its cause. They call attention to the obser-

vation, that in benzene poisoning the stores of vitamin C are also depleted and the mechanism in arsphenamine may be similar. Von Niekerk³⁷ denies that vitamin C has any prophylactic action against horse serum anaphylactic shock in guinea pigs.

Because of the suggestive evidence of the relationship of cevitamic acid to anaphylactic and allergic reactions we thought it worth while to see what status bronchial asthma has in this problem. We studied in detail two cases of asthma, one very severe and the other moderately severe.⁴⁸ The very severe case was deficient in vitamin C because of dietary restriction, the other case was normal in this respect. Both were saturated by oral administration of the vitamin but no conspicuous improvement was noted. Administration of as much as 1000 mg. of the vitamin intravenously during an attack produced no improvement and the use of adrenalin had to be resorted to. Simultaneously with our work Hunt³⁸ in England used cevitamic acid in the treatment of twenty asthmatic patients. No urinary or blood determinations of the vitamin were done. They came to the same conclusion as we did, namely that vitamin C by mouth and intravenously had no effect on the symptomatology of bronchial asthma. About the same time, however, a report appeared in the French literature³⁹ claiming that fifteen of twenty patients with bronchial asthma were improved by intravenous injections of cevitamic acid. They claim no effect from oral administration.

Miscellaneous. Vitamin C has been used with reported favorable results in many other conditions. The non-scorbutic hemorrhagic diatheses have received a good deal of attention. Cotti and Larizza⁴⁰ have produced a decrease in coagulation time in both normal and hemophilic individuals by the use of 50-100 mg. of cevitamic acid daily. Glanzmann⁴¹ advises its use in purpura although denies that there is necessarily a deficiency of the vitamin in this condition. Finkle⁴² found sub-normal levels of cevitamic acid in various hemorrhagic conditions. We have found no constant deficiency or any striking therapeutic effect from the use of cevitamic acid in purpuras.⁴⁸

Ewans⁴³ used the vitamin intravenously in heart failure and noted good diuretic effect. Cevitamic acid was also found to be a good treatment for insomnia by Maurer and associates.⁴⁴

Its use was recommended in numerous other conditions, including psoriasis, whooping cough⁴⁶ and urticaria.⁴⁷

Summary and Conclusions. In spite of all the work done on this subject there is no conclusive proof that vitamin C deficiency is the cause of any other disease except scurvy; or that its administration will cure any other disease. But the newer knowledge makes us ever more conscious of the important role it plays in the various physiologic processes of the body. And hence the need of its presence in adequate amounts in the diet. Diets inherently poor in this substance should be carefully supplemented. Patients suffering from diseases in which there is increased requirements such as febrile conditions, hyperthyroidism, malignancies or leukemia should receive an especially liberal allowance.
30 N. Michigan Ave.

BIBLIOGRAPHY

- Gothlin, G. F., Friselle, and Rundquist, N.: Experimental determinations of vitamin C (ascorbic acid) of the physically healthy adult. *Acta. Med. Scandinav.*, **92**: 1, 1937.
- Smith, S. L.: Human requirements of vitamin C. *J. A. M. A.*, **111**: 1753, 1938.
- von Eekelen, M.: On the amount of ascorbic acid in the blood and urine; the daily human requirement of ascorbic acid. *Biochem J.*, **30**: 2291, 1936.
- Heineman, Martin: Human requirements for Vitamin C. *Biochem J.*, **30**: 2299, 1936.
- Dann, M., Cogwell, George R.: Vitamin C requirements of the guinea pig. *J. Nutr.*, **9**: 507, 1935.
- Bullock, J. G. M., Rothstein, J. A., Ratish, H. D., and Harde, E.: Cevitamic Acid Excretion in Pneumonia and some other Pathological Conditions. *Proc. Soc. Exp. Bio. & Med.*, **34**: 1, 1936.
- Drigalski, Wolst: Vitamin C in Urine in Health and Disease. *Klin. Wehnschr.*, **14**: 337, 1935.
- Schroeder, Hermann: *Klin. Wehnschr.*, **14**: 484, 1935.
- Jetter, W. W., and Bumbalo, T. S.: The Urinary output of Vitamin C in Active Tuberculosis in Children. *Am. J. M. Sc.*, **195**: 362, 1938.
- Abbasy, M. A., Hill, N. G., and Harris, L. J.: Vitamin C and Juvenile Rheumatism and some observations on the Vitamin C reserve in surgical tuberculosis. *Lancet*, **2**: 1413, 1936.
- Abbasy, M. A., Harris, L. J., and Hill, N. G.: Vitamin C and Infection: Excretion of Vitamin C in osteomyelitis. *Lancet*, **2**: 177, 1937.
- Rinehart, J. F., Greenberg, L. D., Olney, M., and Choy, F.: Metabolism of Vitamin C in Rheumatic Fever. *Arch. Inst. Med.*, **61**: 552, 1938.
- Grunke, W., and Otto, H.: The Clinical Significance of Vitamin C. *Med. Klin.*, **32**: 52, 1936.
- Harris, L. J., Abbasy, M. A., Yudkin, J., and Kelly, S.: Vitamins in Human Nutrition, Vitamin C reserves of subjects of voluntary Hospital Class. *Lancet*, **1**: 1488, 1936.
- Harris, L. J., Passmore, R., Page, I. W.: Influence of Infection on Vitamin C content of Tissues of Animals. *Lancet*, **2**: 183, 1937.
- Keith, J. D., and Hickmans, E. M.: Vitamin C excretion in children with particular reference to rheumatic fever. *Arch. Dis. Childhood*, **13**: 125, 1938.
- Steinbach, M. M., and Klein, S. J.: Effect of Vitamin C on Tolerance to Tuberculin. *Proc. Soc. Exp. Biol. and Med.*, **35**: 151, 1936.
- von Gaygi, G. J.: Bactericidal Power and Antitoxic Action of Vitamin C. *Klin. Wehnschr.*, **15**: 185, 1936.
- Otto, H.: Treatment of Diphtheria with cevitic acid. *Klin. Wehnschr.*, **15**: 1510, 1936.
- Ecker, E. E., Pillemer, L., Werxheimer, D. L., and Gradis, H.: Ascorbic Acid and Complement Function. *J. Immun.*, **34**: 19, 1938.
- King, C. G.: Vitamin C, Ascorbic Acid. *Physiol. Rev.*, **16**: 238, 1936.
- Szent-Gyorgyi, Albert: On the function of hexuronic acid in the respiration of the cabbage leaf. *J. Biol. Chem.*, **90**: 385, 1931.
- Tauber, H., Kleiner, J. S., and Mishkind, D.: Ascorbic Acid Acidase. *J. Biol. Chem.*, **110**: 211, 1935.
- Mosonyi, Johann: Einfluss des Schilddrussenhormones auf den Vitamin C stoffwechsel. *Ztschr. f. physiol. Chem.*, **237**: 173, 1935.
- Musulin, R. R., Silverblatt, Ethel, King, C. G., Wood, Gladys: Titration and biological assay of Vitamin C in tumor tissue. *Am. J. Cancer*, **27**: 707, 1936.
- Watson, A. J.: The Chemical reducing capacity and Vitamin C content of transplantable tumors of guinea pigs and rats. *Brit. J. Exper. Path.*, **17**: 124, 1936.
- Watson, A. J.: A note on the reducing activity of the tissues of normal and tumor bearing rats and mice. *Biochem. J.*, **28**: 811, 1934.
- Voegtlin, Carl, Kaheer, Herbert, and Johnson, J. M.: The calorimetric and spectrophotometric determination of vitamin C in malignant tumors. *Am. J. Cancer*, **29**: 477, 1937.
- Vogelaar, J. P. M., and Erlichman, E.: Significance of ascorbic acid for the growth in vitro of Crocker mouse sarcome. *Am. J. Cancer*, **31**: 283, 1937.
- Alt, Howard L., Chinn, Herman, and Farmer, Chester: The blood plasma ascorbic acid in patients with achlorhydria (pernicious and iron deficiency). *Am. J. Med. Sc.*, **197**: 229, 1939.
- Eufinger, H., Gaehtgens, G.: Influence of vitamin C on pathologically changed white blood picture. *Klin. Wehnschr.*, **15**: 150, 1936.
- Archer, H. E., and Graham, George: The subscorby state in relation to gastric and duodenal ulcer. *Lancet*, **2**: 364, 1936.
- Ingalls, T. H., and Warren, H. A.: Asymptomatic scurvy—its relation to wound healing and its incidence in patients with peptic ulcer. *New Eng. J. Med.*, **217**: 443, 1937.
- Browne, G.: Vitamin C deficiency in peptic ulceration estimated by the capillary resistance test. *Brit. M. J.*, **1**: 560, 1938.
- Rivers, A. B., Carlson, L. A.: Vitamin C as supplement in the therapy of peptic ulcer: Preliminary report. *Proc. Staff Meet. Mayo Clinic*, **12**: 383, 1937.
- Chamberlin, D. T., and Perkins, J. J.: The level of ascorbic acid in blood and urine of patients with peptic ulcer. *Am. J. Digest. Dis.*, **5**: 493, 1938.
- Magee, H. E., Anderson, W., McCallum, J.: Diet and peptic ulcer in cavies. *Lancet*, **1**: 12, 1929.
- Hawley, E. W., Frazer, John, Lucius, B., Stephens, D. J. *Proc. Soc. Exper. Biol. and Med.*, **34**: 218, 1936.
- Bourne, G.: The role of vitamin C in the organism as suggested by its cystology. *Physiol. Rev.*, **16**: 442, 1936.
- Bourne, G.: Vitamin C. *Med. J. Australia*, **1**: 339, 1934.
- Wilkinson, J. F., and Ashford, C. A.: Vitamin C deficiency in Addison's disease. *Lancet*, **2**: 967, 1936.
- Friend, Dale G., and Marquis, H. H.: Arsphenamin sensitivity and vitamin C. *Am. J. Syphilis, Gonorrhea and Ven. Dis.*, **22**: 239, 1938.
- Cormia, J. E.: Experimental arsphenamin dermatitis—The influence of vitamin C in the production of arsphenamin sensitiveness. *Canad. M. A. J.*, **36**: 392, 1937.
- von Niekerk, J.: Anaphylaxis and Vitamin C. *Jour. Allergy*, **8**: 446, 1937.
- Hunt, H. B.: Ascorbic acid in bronchial asthma. Report of therapeutic trial of twenty-five cases. *Brit. M. J.*, **1**: 726, 1938.
- Hagiesco, G., Bazavan, M., Criscota, M., and Cio-

ranesco, M.: Treatment of pulmonary asthma by ascorbic acid. *Presse Medicale*, 40: 1435, 1938.

40. Cott, L., and Larizza, P.: Influence of cevitamic acid on coagulation of blood. *Klin. Wchnschr.*, 12: 227, 1936.

41. Glanzmann, E.: Problem of fulminating purpura. *Schweizerische med. Wchnschr.*, 67: 829, 1937.

42. Finkle, Philip: Vitamin C saturation levels in the body in normal subjects and in various pathological conditions. *J. Clin. Invest.*, 16: 587, 1937.

43. Ewans, W.: Vitamin C in heart failure. *Lancet*, 1: 308, 1938.

44. Maurers, Wiles, H. O. Schoessel, E. W., and Fisher, M. L.: The Effect of cevitamic acid on Insomnia. *Ill. M. J.*, 74: 84, 1938.

45. Ecker, E. E., Pillemer, Louis, Griffiths, J. J., and Schwartz, W. P.: Complement and ascorbic acid in human scurvy. *J. A. M. A.*, 112: 1449, 1939.

46. Vermillion, E. L., and Stafford, G. E.: Cevitamic acid therapy of whooping cough; preliminary report. *J. Kansas M. Soc.*, 39: 469, 1938.

Gairdner, D.: Vitamin C and whooping cough. *Brit. M. J.*, 2: 742, 1938.

47. Rosenberg, W. A.: Vitamin C deficiency as a cause of urticaria. *Arch. Dermat. and Syph.*, 37: 1010, 1938.

48. Spellberg, M. A., Keeton, R. W.: Ascorbic acid excretion, saturation and utilization, with some diagnostic implications. *Arch. Int. Med.*, 63: 1095, 1939.

DISCUSSION

H. G. Poncher (Chicago): It is unfortunate that this subject was exploited before the medical profession had an opportunity to evaluate it as Dr. Spellberg has done. He has given a very good summary of the whole subject.

Theoretically vitamin deficiencies may arise through a number of mechanisms. First, absolute deficiency; second, decreased absorption; third, increased utilization; and fourth, increased elimination.

The points which Dr. Spellberg brought out I think are of great practical importance. Certainly with the increasing education of the laity we are not going to run into the absolute deficiencies which we have seen in the past. In place of the classical scurvy we are more apt to encounter subclinical vitamin C deficiency states in normal individuals under physiologic stress and in patients with various diseases. The former is exemplified by infants and children during active periods of growth and women during pregnancy. The latter by chronic ulcerative colitis. Many clinicians have witnessed striking clinical improvement when the deficiency syndrome has been subtracted from the clinical picture of this disease. This holds true for many other diseases in which vitamin C saturation may modify the course without having any primary etiologic connection.

Dr. Spellberg has given you a comprehensive and critical presentation of this point of view.

BRINKLEY LOSES SUIT AGAINST EDITOR OF HYGEIA, THE HEALTH MAGAZINE

"The suit for libel and damages filed by John R. Brinkley against the Editor of *Hygeia* was called in the federal court at Del Rio, Texas, on Wednesday, March 22," *The Journal of the American Medical Association* for April 8 says. "A jury consisting largely of residents of the vicinity of Del Rio was impaneled

and evidence began to be offered by the plaintiff on the afternoon of the same day. In the course of the trial the plaintiff, Dr. John R. Brinkley, offered in evidence not only his own testimony but that of his associates; also a number of character witnesses. It was the decision of the court that patients would not be allowed to testify as to the results of any procedures performed on them. For the defendant there appeared three experts: Drs. Alfred I. Folsom, Dallas; Benjamin Weems Turner, Houston, and Charles S. Venable, San Antonio; also a chemist of the American Medical Association, Dr. E. W. Schoeffel, Chicago. Furthermore, there were read into the record several depositions containing evidence prepared for a previous suit of a similar character which was dismissed. Among the exhibits offered were most of the pamphlets circulated by the plaintiff and a book concerned with his biography written by Clement Wood and entitled 'The Story of a Man.' Following the completion of the evidence, which required four full days, attorneys for both sides presented the case to the jury and the instructions were given to the jury by Judge R. J. McMillan. After a consideration of several hours, the jury returned its verdict for the defendant. In a future issue of *The Journal* (probably the issue of April 22) and also in *Hygeia* it is proposed to present a complete abstract of the evidence and the instructions of Judge McMillan to the jury."

HYPOVITAMINOSIS IN CARDIOVASCULAR PATHOLOGY

G. Bickel in *PRESS MEDICALE*, PARIS 46: 1913-1928 (Dec. 28) 1938 observed the disappearance of severe cardiac dilatation accompanied by cantering rhythm, simultaneously with the alcoholic polyneuritis, after the cardiotonic treatment had been interrupted and the patient was treated only with vitamin. The author shows further that the great importance of circulatory symptoms in the symptomatology of classic B₁ avitaminosis, beriberi, justifies a search for cardiovascular involvement in numerous disorders due to a partial deficit of vitamin B₁. He made studies on patients with polyneuritis of alcoholic and gradivic origin and discovered that cardiac disturbances may become manifest in alcoholic addicts and in pregnant women in the absence of nervous symptoms other than diminution in the tendon reflexes and a slight weakness in the legs. On the other hand, these patients almost always present a certain degree of anorexia or of other gastrointestinal disturbances, which are early symptoms of a B₁ hypovitaminosis. After discussing the cardiovascular disorders of chronic alcoholism, the author takes up the cardiac disturbances of pregnancy, which, when they appear independent of valvular, arterial or renal disorders, should always suggest a deficit in the intake or utilization of vitamin B₁. To be sure, the cardiovascular disturbances of purely pravidic origin, that is, independent of all preexisting cardiac disorders, are usually less severe than those which appear in alcoholism. Nevertheless the author observed a favorable effect of the administration of vitamin B₁ in several women

who, during the fourth or fifth month of pregnancy, developed tachycardia, cardiac erethism and slight dilatation of the heart, symptoms which generally are attributed merely to mechanical or toxic causes. After pointing out that cardiac disorders of hypovitaminotic origin occasionally are observed also in diabetes, in hyperthyroidism, in febrile diseases with grave denutrition, in certain gastrointestinal disturbances and so on, the author makes remarks about the mechanism by which the B₁ hypovitaminosis might give rise to the circulatory disorders and then discusses the therapy. He says that the rapid and complete cure of the cardiovascular disturbances requires comparatively large doses of vitamin B₁; at first from 10 to 20 mg. should be administered daily by injection. Beginning with the third week, that is, after a sufficient amelioration has been obtained, vitamin B₁ is given by mouth in combination with a suitable diet.

STATE MEDICINE

Chiefly its sourest fruits would seem to be:

1. Lowered morale on the part of the profession;
2. Inadequate service towards the clientele due to bureaucratic red tape, inadequate recompense and inadequate study and diagnosis of individual cases eventuating from a mass clientele;
3. Too much lay control of scientific practice;
4. Too political and too unscientific a control;
5. Too much taxation for results to taxpayers;
6. Government interference with affairs of nature involved to be regimented under human mechanistics;
7. Development of a group of "Maladies imaginary or of malingering citizens who find it more profitable to ail at the expense of the state than to follow the normal lines of industry;
8. NO REDUCTION IN DEATH NOR INCREASE IN BIRTH RATE;
9. Analagous ethical debauchery of the apothecaries and loss of profit to them as well as to dentists.
10. General chaos of method and confusion of ideals with no profit except to uninformed lay supervisors and inspectors.

The physicians of the United States will do well in the coming year to study this question both from the point of the profession and the public but also to the public pocketbook which is after all, only the heart and wealth of the nation.

—*Illinois Medical Journal.*

DOGS SAVED BY SULFANILAMIDE

Sulfanilamide is making dogs healthier. The same chemical which has been used extensively in successful treatment of more than 14 human diseases has saved dogs doomed to death from a disease that is a combination of so-called sleeping sickness and meningitis.

Drs. M. L. Morris and T. J. Murray of the Raritan, N. J., Hospital for Animals and Rutgers University respectively, report to the technical journal, *Science*, here

that 13 out of 14 dogs suffering from meningo-encephalitis associated with canine distemper recovered completely following sulfanilamide treatment. Whereas meningo-encephalitis associated with canine distemper in the past has been 100 per cent fatal, it can now be classed as 93 per cent curable. Sulfanilamide has little value, however, in the treatment of distemper alone, Drs. Morris and Murray point out.

The specific cause of the condition associated with canine distemper in dogs is not known. Distemper is generally considered the canine counterpart of human influenza.—*Victor News.*

DON'T LET YOUTH RULE, ETHEL BARRYMORE PLEADS

Chicago—(AP)—Ethel Barrymore Saturday placed the accent on age.

"God help us," she declared, "if we put ourselves in the hands of the youth of any country.

"I don't believe anything important should be turned over to the inexperienced.

"Very few people, you know, were born in Bethlehem. Jesus was very good in His youth, but there has been only one Jesus."

The actress, who plays a grandmother of 101 in the drama, "White Oaks," said "I didn't mean that youth is unbalanced or, in the aggregate, irresponsible, but for our own good we must have the trustworthiness that comes with the years.

"There never has been a time, actually, when full maturity hasn't counted most importantly, and I am convinced there never will be a time when it won't be the chief reliance of all nations."

Marriages

WARREN W. YOUNG to Miss Dorothy Johnson, both of Chicago, May 6.

Personals

Dr. Edwin W. Ryerson will address the scientific meeting in honor of the celebration of the 70th Anniversary of the Founding of the Boston Children's Hospital, on June 10. He will speak on "A New Shelf Operation for Subluxation of the Hip-joint."

Drs. Paul R. Cannon and E. M. K. Geiling will present a program on "Sulfanilamide" before the Scott County Medical Society of Iowa at Davenport on June 6.

Dr. Henry Irish will give a talk on "Physical Examinations of Children" before the staff of the Kewanee Hospital, Kewanee on June 5.

Drs. Charles Newberger and Joseph Green-gaard will present a program on obstetrics and pediatrics before the doctors of the Jackson County Medical Society at Murphysboro on June 7.

Dr. Anders Weigen has been invited to give an illustrated lecture on "Medical Impressions of Norway and Sweden" before the physicians of Whiteside County Medical Society at their annual dinner meeting on June 16.

Drs. Paul H. Harmon and S. Perry Rogers, addressed the McDonough County Medical Society at Macomb, Illinois, on "The Treatment of Acute and Chronic Osteomyelitis" and "Injuries to Muscles and Tendons," respectively, on May 25.

Dr. Joseph L. Baer has been invited to address a lay meeting sponsored by the Fulton County Medical Society on June 15. He will speak on "The Importance of Prenatal Care."

The following officers of the Chicago Society of Internal Medicine were elected for the coming year: President, James G. Carr; Vice President, LeRoy H. Sloan and Secretary-Treasurer, C. F. G. Brown.

Drs. Ralph Reis and Craig D. Butler will present a scientific program on Obstetrics and Pediatrics before the DeKalb County Medical Society on June 15. Following the scientific meeting there will be a public meeting in Sycamore with Doctors Reis and Butler speaking on Maternal and Infant Welfare.

Dr. Leon Unger addressed the Chicago Chapter of the American Physiotherapy Association June 7 on "Allergy in General."

Dr. Guy S. Van Alstyne discussed "The Management of Biliary Tract Surgery," before the Southern Cook County Branch of the Chicago Medical Society.

At a meeting of the Calumet Branch May 19, Dr. William D. McNally spoke on "Practical Aspects of Toxicology in General Practice."

Mr. Henry P. Chandler, president, Chicago Bar Association, addressed the Northwest Branch May 19 on "Cooperation of the Legal and Medical Professions."

The South Chicago Branch was addressed May 23 by Dr. Edward L. Cornell on "The Reckless Interference with the Normal Process of Labor."

Dr. Michael L. Mason discussed "Management of Open Wounds" before the Irving Park Branch May 23.

Dr. George B. Eusterman, Rochester, Minn., addressed the Rock Island County Medical Society in Rock Island, May 9 on "Recent Important Advances in the Diagnosis and Treatment of Gastroduodenal Disease."

Dr. Michael H. Streicher, Chicago, addressed the St. Clair County Medical Society in Belleville June 1 on "Diseases of Colon and Rectum and Proctoscopic Examination."

At a meeting of the Bureau County Medical Society, Princeton, May 9, Dr. James H. Mitchell, Chicago, discussed "Diagnosis and Treatment of Common Dermatoses."

At a meeting of the Chicago Society of Allergy June 10, Drs. Isidor Harrison Tumpeer spoke on "A Dramatic Asthmatic" and Rudolph Hecht on "Sensitization to Simple Chemicals: Reactions to Commercial and Purified Lipstick Dye."

Dr. Disraeli W. Kobak discussed "Advances in Short Wave Therapy" before the McDonagh Society for Clinical Research May 31.

Drs. Waltman Walters and Edwin J. Kepler, both of Rochester, Minn., discussed "Adrenal Cortical Neoplasms" before the Peoria City Medical Society May 19.

Dr. George L. Apfelbach, Chicago, addressed the Grundy County Medical Society at Starved Rock, April 25, on "Diagnosis of Lower Back Pains."

Dr. Vivien P. Siegel, East St. Louis, discussed "Infections of the Hand" before the Madison County Medical Society in Wood River May 5.

Dr. James B. Murphy, member of the Rockefeller Foundation for Medical Research, New York, lectured at Billings Hospital under the auspices of the Educational Association on Cancer Lectureship May 10 on "The Development of Present Trends in Cancer Research."

Dr. Rock Sleyster, Wauwatosa, Wis., President of the American Medical Association, was the guest of honor at the annual dinner meeting of the Chicago Medical Society at the Palmer House June 21. Dr. Charles B. Reed was toastmaster.

Dr. Herman N. Bundesen, who has been on a leave of absence since November, 1938, has re-

turned to his activities as health commissioner and president of the Board of Health of Chicago. Dr. Robert A. Black, who had been acting president of the board during Dr. Bundesen's absence, had asked to be relieved so that he could devote his full time to his private practice, it was reported.

Dr. A. M. Harvey, member of the Board of Directors of the Tuberculosis Institute of Chicago and Cook County and chairman of the organization's industrial committee, will be awarded an honorary degree of Doctor of Science at Knox College, Galesburg, Illinois, Tuesday, June 13. President Carter Davidson will award the degree.

While at Knox, Dr. Harvey also will attend the celebration of the 50th anniversary of his graduating class.

Dr. Harvey is being awarded the Doctor of Science degree in recognition of his work in industrial medicine. Known as the dean of industrial medicine, Dr. Harvey was one of the founders of the American Association of Industrial Physicians and Surgeons, one of the organizers and a member of the first board of directors of the National Safety Council and first president of the Chicago Council of Industrial Safety. Now retired, he was chief surgeon for the Crane Company for 40 years.

After being graduated from Knox, Dr. Harvey took his medical work at the University of Michigan and the University of Illinois.

Dr. Frank Brawley, Chicago eye specialist, has been made president-elect of the American Academy of Ophthalmology and Otolaryngology, an organization of about 3,000 specialists in diseases of the eye (ophthalmology) and diseases of the ear, nose and throat (otolaryngology), a bulletin announces.

Dr. Brawley was elected by special interim action of the council of the Academy to succeed Dr. Albert C. Snell, Rochester, N. Y., who had to resign because of ill health. Dr. Snell was elected at the annual convention of the Academy in Washington, D. C., last year. This year the convention will be held in Chicago at the Palmer House, October 8-14. Dr. Brawley will take office in January 1940.

A native of Illinois, Dr. Brawley graduated from the University of Illinois College of Medicine in 1902 and has practiced in Chicago since

that time. At present he is senior ophthalmologist to St. Luke's Hospital. He is a fellow of the American College of Surgeons and a member of the American Medical Association.

At the annual meeting of the Chicago Gynecological Society held June 16, the following officers were elected: President, Julius E. Lackner; President-elect, Harold K. Gibson; Vice-President, Charles E. Galloway; Secretary, Edward Allen; Treasurer, George H. Gardner; Editor, Garwood C. Richardson; Pathologist, Ralph A. Reis.

News Notes

—The officers for the Chicago Society of Internal Medicine for the coming year are: President, Dr. James G. Carr; Vice President, Dr. LeRoy H. Sloan; Secretary-Treasurer, Dr. C. F. G. Brown.

—Dr. Karl Goldhamer, formerly Director of the X-Ray Laboratory of the Anatomical Institute of the University of Vienna, is now located at Quincy, Illinois. He recently completed a series of lectures on X-Ray Interpretation at the University of Havana (Cuba).

—At the annual meeting of the Illinois Medical Editors Association, held at Rockford last month, Dr. Harold Swanberg was elected Vice-President for the ensuing year.

—Dr. Herman L. Kretschmer was re-elected Treasurer of the American Medical Association at their meeting in St. Louis. He was also re-elected President of the American Board of Urology, Inc. at the annual meeting in White Sulphur Springs, West Virginia, May 26-28.

—At the annual meeting of the Chicago Urological Society held May 25 the following officers were elected: President, T. G. McDougall, Vice President, Irving J. Shapiro; Secretary-Treasurer, William J. Baker.

—The Commonwealth Fund has offered to contribute not less than \$225,000 to build and equip a community hospital in Pittsfield, provided that the people of the area to be served raise an additional \$60,000 by July 1, according to *Hospitals*. Dear Doctor Knox:

—A survey to determine the cheapest way to destroy mosquitoes was decided on May 19 by the Tri-County Mosquito Abatement Committee,

made up of representatives from Lake, DuPage and Cook Counties, newspapers, reported recently. When the plans have been completed they will be made the basis of a proposal for a WPA project, it was stated.

—Members of the Department of Medicine of the University of Illinois College of Medicine are interested in the study of essential thrombocytopenic purpura. Patients with this disease will be accepted in the Research and Educational Hospitals without charge provided they are referred by their family physician. Letters should be addressed to the head of the Department of Medicine of the University.

—The Educational Committee has prepared an exhibit entitled, "The Family Doctor" for the window of the Marshall Field & Co. Men's Store. Included in the display are the three prize winning posters designed by high school students of Rockford in the poster contest sponsored by the Illinois State Medical Society in connection with its annual meeting in May.

—An intensive course on glaucoma will be presented at the Illinois Eye and Ear Infirmary for five days beginning September 11 under the direction of Dr. Harry S. Gradle. The course will be limited to ten physicians who are practicing ophthalmology alone or with otolaryngology. About forty members of the staff will give the instruction, which will consist of two hours of lectures each day with demonstrations and practical instruction the remainder of the day. The plan also includes luncheons with round table discussions. The details may be obtained from Dr. Samuel J. Meyer, secretary of the course, Illinois Eye and Ear Infirmary, 908 West Adams Street.

—A symposium on "Neuromuscular Tension" was held at the meeting of the American Association for the Advancement of Science in Milwaukee, on June 21. Dr. Edmund Jacobson acted as chairman. Among the speakers were Dr. Earle B. Fower, Maurice H. Krout, Ph.D., and Professor Walter E. Cannon (Harvard), who spoke extemporaneously.

The material for "Organized Payments for Medical Services" is largely a report of the practical work of state and county medical societies. The AMA Bureau of Medical Economics has assembled this material for the information of all

medical societies and the general public. "Factual Data on Medical Economics" is an arsenal of absolutely reliable information of the sort that today is so much needed both by the profession and the public.

Deaths

HENRY HERBERT BAKER, Cairo, Ill.; University of Louisville (Ky.) Medical Department, 1907; aged 58; died, March 22, of influenza.

MARY SALINA BARRADELL, Chicago; Chicago College of Medicine and Surgery, 1913; member of the Illinois State Medical Society; aged 68; died, March 9, in the Roseland Community Hospital of cerebral hemorrhage.

WILLIS BENTON CAUBLE, Murphysboro, Ill.; Rush Medical College, Chicago, 1888; aged 72; died, March 10, in San Francisco of uremia.

WILLIAM E. CHAPMAN, Leland, Ill.; Hahnemann Medical College and Hospital, Chicago, 1904; served during the World War; member of the Illinois State Medical Society; aged 63; died, March 19.

ROSCOE CONKLING DANFORD, Pana, Ill.; Northwestern University Medical School, Chicago, 1896; member of the Illinois State Medical Society; Fellow of the American College of Surgeons; served during the World War; chief surgical department, Huber Memorial Hospital; aged 67; died, March 30.

THOMAS D. DOAN, Palmyra, Ill.; St. Louis University School of Medicine, 1905; member of the House of Delegates of the American Medical Association in 1918; member and formerly vice president of the Illinois State Medical Society; aged 70; died, March 1.

MARTIN R. DOYLE, East St. Louis, Ill.; Kentucky School of Medicine, Louisville, 1885; aged 83; died, February 5, in St. Mary's Hospital of a large stone in the common bile duct and cholecystitis.

DANIEL NATHAN EISENDRATH, once a distinguished surgeon of Chicago and more recently a resident of Paris, France, died in Paris, June 1, following an operation. Dr. Eisendrath was born in Chicago, Nov. 8, 1867. He received his bachelor's degree from Johns Hopkins University in 1889 and the degree of doctor of medicine from Northwestern University Medical School in 1891. After study abroad he began the practice of medicine in Chicago. He was assistant clinical professor of surgery at Rush Medical College and attending urologist at Michael Reese Hospital. He left the United States to establish a permanent residence in France in 1930, qualifying as a practitioner under the laws of France and becoming consulting urologist to the American Hospital in Paris. He was the author of a textbook on clinical anatomy published in 1903, a textbook on surgical diagnosis, and also with H. C. Rolnick author of "Clinical Urology,"

the first of the several editions of which appeared in 1928. He was also the author of a number of monographs and scientific contributions devoted to surgical subjects. During the World War he served as captain in the medical corps. He was a member of the Chicago Surgical Society, the Western Surgical Association, the Chicago Urological Society and the American Urological Association. He was a fellow of the American College of Surgeons and a member of the Congrès de chirurgie (France) and of the Société belge d'urologie. For some years he served as Paris correspondence of *THE JOURNAL*, A. M. A.

WALDO FISHER, Alton, Ill.; Rush Medical College, Chicago, 1882; formerly member of the city council and board of education; for many years on the staff of St. Joseph's Hospital; aged 81; died, February 8, of cerebral sclerosis.

GATEWOOD, Chicago; Rush Medical College, Chicago, 1911; clinical professor of surgery at his alma mater; member of the American Surgical Association and the Western Surgical Association; fellow of the American College of Surgeons; associate attending surgeon to the Presbyterian Hospital for many years; attending surgeon to the Cook County Hospital and the Highland Park (Ill.) Hospital; treasurer of the Chicago Surgical Society; author of numerous articles in various surgical journals; aged 51; died suddenly May 22, at his home in Highland Park, Ill., of heart disease.

JULIA B. DAY GODFREY, Chicago; Hahnemann Medical College and Hospital, Chicago, 1891; aged 90; died, March 1, of carcinoma of the uterus and vagina.

GEORGE MCCLAIN HARPER, Springfield, Ill.; Medical College of Indiana, Indianapolis, 1897; aged 61; died, February 4, in St. John's Hospital of diabetes mellitus.

J. OTTIS HART, Benton, Ill.; St. Louis College of Physicians and Surgeons, 1902; aged 60; died, February 25, of myasthenia gravis.

EDWARD MORTON HEACOCK, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; a Fellow, A. M. A.; fellow of the American College of Surgeons; member of the Radiological Society of North America; on the staffs of the Lutheran Memorial and Evangelical Deaconess hospitals; aged 62; died, March 12, of coronary sclerosis.

ROLANDO HAMILTON HENRY, Princeton, Ill.; Miami Medical College, Cincinnati, 1884; member of the Illinois State Medical Society; also a pharmacist; aged 82; died, March 25, of coronary thrombosis.

OTTO FREDERICK JENS, Chicago; Jenner Medical College, Chicago, 1901; Illinois Medical College, Chicago, 1902; aged 69; died, March 18, of coronary thrombosis and pernicious anemia.

HARLIE V. LEWIS, Lawrenceville, Ill.; Physio-Medical College, Cincinnati, 1880; formerly county coroner; aged 80; died, February 11, of cerebral hemorrhage.

JOSEPH J. KUCZKOWSKI, Chicago; Loyola University School of Medicine, Chicago, 1926; aged 42; died, February 23, in Vienna, Germany, of myocarditis.

GEORGE WILLIAM LAWTON, Maywood, Ill.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1902; aged 67; died, March 3, in Natchez, Miss., of heart disease.

ARTHUR ROBERT LINDSAY, Lawrenceville, Ill.; Northwestern University Medical School, Chicago, a Fellow, A. M. A.; 1909; aged 53; died, March 15, in a hospital at Vincennes, Ind., of acute cholecystitis.

HARRY MANDEL, Chicago; General Medical College, Chicago, 1923; a Fellow, A. M. A.; aged 41; on the staff of the Englewood Hospital, where he died, March 15, of coronary thrombosis.

FREDERICK H. METCALF, Franklin, Ill.; Chicago Medical College, 1886; a Fellow, A. M. A.; aged 76; died, February 20, in Our Saviour's Hospital, Jacksonville, of uremia, following urinary retention due to hypertrophied prostate.

LEE HARRISON METTLER, Hubbard Woods, Ill.; Jefferson Medical College of Philadelphia, 1886; professor of neurology, emeritus, at the University of Illinois College of Medicine, Chicago; prosector and assistant to the chair of anatomy, 1886-1887, chief of the medical clinic, 1887-1891, lecturer and clinical instructor of mental and nervous diseases and electro-therapeutics, 1888-1891, Medico-Chirurgical College of Philadelphia; formerly secretary of the Chicago Neurological Society; attending neurologist to the Cook County Hospital, Chicago, 1904-1906, and Norwegian Lutheran Deaconess Home and Hospital, Chicago; author of "Treatise on Diseases of the Nervous System," published in 1905; aged 75; died, March 20, in the Highland Park (Ill.) Hospital.

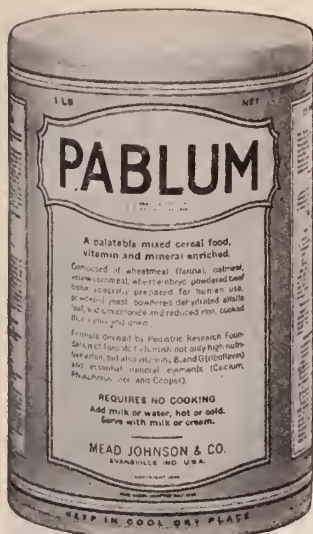
WILLIAM E. MILLER, Chicago; College of Physicians and Surgeons of Chicago; a Fellow, A. M. A.; 1887; on the staff of the Hospital of St. Anthony de Padua; aged 81; died, March 25, of uremia and nephritis.

LEVIN H. A. NICKERSON, Quincy, Ill.; University of Pennsylvania Department of Medicine, Philadelphia, 1874; member and past president of the Illinois State Medical Society; past president and secretary of the Adams County Medical Society; member of the House of Delegates of the American Medical Association, 1908-1909; aged 88; died, March 13, in St. Mary's Hospital.

WILBERT A. STALEY, Warrensburg, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; a Fellow, A. M. A.; aged 67; died, February 9, of coronary sclerosis.

LAURENCE JOSEPH MURPHY, Evanston, Ill.; University of Illinois College of Medicine, Chicago, 1931; member of the Illinois State Medical Society; aged 31; died, March 17, in St. Petersburg, Fla., of chronic nephritis.

EDGAR DUMONT WING, Galesburg, Ill.; University of Pennsylvania Department of Medicine, Philadelphia, 1873; health commissioner; aged 91; died, February 1, of uremia due to prostatic obstruction.



1 oz. of Pablum contains 221 mg. Ca, 8.5 mg. Fe—So absorptive is Pablum that when mixed to the consistency of ordinary hot cooked cereals it holds 7 times its weight in milk—before being served with milk or cream. Hence an ounce serving of Pablum thus mixed with milk adds at least .53 Gm. calcium to the diet.

PABLUM is Richer than any of these Vegetables in IRON and CALCIUM



Peas

1/17 as much Fe,
1/27 as much Ca
as PABLUM

	Mg. per Oz.	
	Iron	Calcium
PABLUM	8.5	221.0
Beets	0.67	6.8
Carrots	0.17	13.1
Peas	0.50	8.0
Spinach	1.13	21.8
String Beans	0.27	14.2
Tomatoes	0.12	3.1

Tomatoes

1/70 as much Fe,
1/71 as much Ca
as PABLUM



Carrots

1/50 as much Fe,
1/17 as much Ca
as PABLUM



NOT only does Pablum have a higher iron and calcium content than vegetables but, most important, clinical studies of children have demonstrated that in Pablum these minerals are in available form. Investigations by Stearns and Stinger, Schlutz, and Cowgill show that even such an iron-rich vegetable as spinach did not increase iron storage in the body, in fact, caused a loss in some instances. A factor responsible for this difference may be the higher content of *soluble* iron in Pablum—7.8 mg. per oz. Then, too, the water in which Pablum is cooked (by a patented process) is dried with it, whereas the cooking water of vegetables is usually discarded, with its valuable content of minerals and vitamins. Stearns reports difficulty in feeding spinach in sufficient quantities to affect the iron balance of children. Spinach and other highly flavored vegetables are often difficult to feed. Pablum, on the other hand, is a palatable cereal that can be fed as early as the third month, and for older children it can be varied in dozens of appetizing dishes. Recipes and samples available on request of physicians.

Pablum consists of wheatmeal (farina), oatmeal, wheat embryo, cornmeal, beef bone, brewers yeast, alfalfa leaf, sodium chloride and reduced iron



Beets

1/12 as much Fe,
1/32 as much Ca
as PABLUM

String Beans

1/31 as much Fe,
1/15 as much Ca
as PABLUM

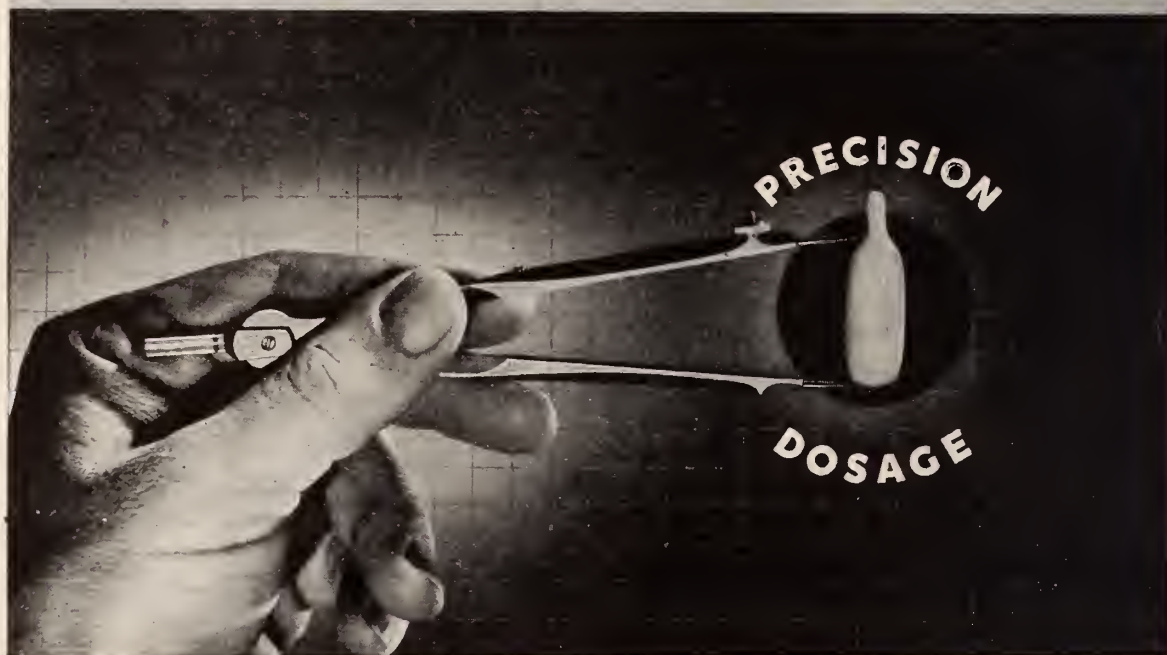
Spinach

1/12 as much Fe,
1/10 as much Ca
as PABLUM



MEAD JOHNSON & COMPANY
EVANSVILLE, INDIANA, U.S.A.

NEO-HOMBREOL DOSULES



A New and Effective Method for Percutaneous Application of Male Sex Hormone (Neo-Hombreol)

We are very proud to announce this latest Roche-Organon contribution to effective percutaneous use of testosterone propionate. Dosules are sealed gelatin capsules, manufactured exclusively by us, containing an accurately measured quantity of Neo-Hombreol (testosterone propionate 'Roche-Organon') in a rapidly absorbable ointment base. Thus, for the first time is it possible in a practical way to administer this potent substance by inunction, free from the obvious danger of overdosage inherent in the use of bulk ointments packaged without measurement control of the individual dose. Each Neo-Hombreol Dosule contains 2 grams of ointment representing 4 milligrams of chemically pure synthetic testosterone propionate. Packages of 25.



INDICATIONS

In the male: male climacteric • prostatic hypertrophy • impotence • hypogonadism • cryptorchidism

In the female: premenstrual mastopathia • female climacteric • dysmenorrhea • menorrhagia • Graves' disease

ROCHE-ORGANON, INC. • NUTLEY • N. J.

Cut Out This Page and Post Conspicuously

BUYERS INDEX

ABDOMINAL SUPPORTERS

S. H. Camp & Co., Jackson, Mich..... ..

FOODS

Borden Company, 350 Madison Ave., New York..... 12
Coca-Coca Co., Atlanta, Ga..... 25
Corn Products Refining Co., New York City..... ..
R. B. Davis Co., Hoboken, N. J..... ..
Knox Gelatine Laboratories, Johnstown, N. Y..... 8
Mead, Johnson & Co., Evansville, Ind..... 15
S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Medical Protective Co., Fort Wayne, Ind..... 22
Physicians Casualty Co., Omaha, Neb..... 19

HOSPITALS

Stokes Hospital, Louisville, Ky..... 19
Summit Hospital, Oconomowoc, Wis..... 20

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 19

PHARMACEUTICALS

Alba Pharmaceutical Co., 80 Varick St., New York City... ..
American Agency, French Vichy, Brooklyn, N. Y..... ..
American Can Co., 230 Park Ave., New York City..... 3
Armour & Co., Chicago..... ..
Ernst Bischoff, Ivoryton, Conn..... ..
Bovine Company, Chicago
Bristol-Myers Co., New York..... 11
Carnrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J... 20
Ciba Company, Cedar and Washington St., New York City. 24
Crookes Laboratories, New York City..... ..
Denver Chemical Co..... ..
E. Fougere & Co..... ..
Gold Pharmacal Co., New York City..... 20
Harrower Laboratory 21
Hoffman-LaRoche, Inc., Nutley, N. J..... 2
Hynson, Westcott & Dunning, Charles and Chase Sts., Baltimore 22

Lederle Laboratories, 30 Rockefeller Plaza, New York... 27

Lilly, Eli, & Co., Indianapolis, Ind..... 14

Morris, Philip, & Co., 19 Fifth Ave., New York..... 13

Nutrition Research Laboratories, 232 S. Michigan Ave., Chicago 10

Parke, Davis & Co., Detroit, Mich..... 5

Petrolagar Laboratories, 8134 McCormick Blvd., Chicago... 4

Reed & Carnrick, Jersey City, N. J..... ..

Roche Organon, Inc., Nutley, N. J..... 16

Schering & Glatz, Inc., New York City..... ..

G. D. Scarle & Co., 4737 Ravenswood Ave., Chicago..... 6

Sharp & Dohme, 111 N. Canal St., Chicago..... ..

E. R. Squibb & Sons, New York..... 9

Frederick Stearns & Sons, New York..... 23

Wm. R. Warner & Co., 113 W. 118th St., New York City... ..

Winthrop Chemical Co., 170 Varick St., New York City... ..

Zimmer Co., Pittsburgh, Pa..... 18

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville, Ill..... 21

Kenilworth Sanitarium, Kenilworth, Ill..... 18

Michell Farm Sanatorium, Peoria, Ill..... 28

Milwaukee Sanitarium, Wauwatosa, Wis..... Front Cover

Norbury Sanitarium, Jacksonville, Ill..... 18

North Shore Health Resort, Winnetka..... 21

Rogers Memorial Sanitarium, Oconomowoc, Wis..... 28

Waukesha Springs Sanitarium, Waukesha, Wis..... 18

Weirick's Sanitarium, Elgin, Ill..... 19

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago.. 19

SURGICAL SUPPLIES

Baum Co., New York..... ..

General Electric X-Ray Corp., 2012 W. Jackson Blvd., Chicago 19

The NORBURY SANATORIUM

JACKSONVILLE, ILLINOIS

INCORPORATED and LICENSED

For the Treatment of Nervous and Mental Disorders

DR. ALBERT H. DOLLEA, Superintendent

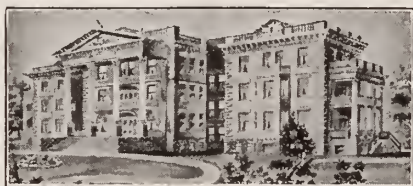
DR. FRANK GARM NORBURY

DR. SAMUEL N. CLARK

Associate Physicians

Address
Communications

THE NORBURY SANATORIUM, Jacksonville, Illinois



BUILDING ABSOLUTELY FIRE-PROOF

Waukesha Springs Sanitarium

FOR THE CARE AND TREATMENT OF
NERVOUS DISEASES

BYRON M. CAPLES, M. D., Medical Director

FLOYD W. APLIN, M. D.

Waukesha, Wisconsin

E. J. Kelleher, M. D.
Medical Director

Kenilworth Sanitarium

Est. in 1905 by Sanger Brown, M. D.

Built and Equipped for the Treatment of
Nervous and Mental Diseases

F. G. Shufflebarger, M. D.
Junior Physician

Write for Booklet
on
Insulin and Metrazol Therapy

Christy Brown
Business Manager

Address:
Box 600
Kenilworth, Ill.

DEPENDABLE PRODUCTS FOR PHYSICIANS

Every product we manufacture is guaranteed true to label and of reliable potency. Our products are laboratory controlled. Catalog mailed on request.

THE ZEMMER COMPANY

Chemists to the Medical Profession

Oakland Station

IL7-39

Pittsburgh, Pennsylvania

Chicago Tumor Institute

21 WEST ELM STREET

Phone: Delaware 5600

Scientific Committee

Max Cutler, M. D., Chairman
Sir G. Lenthal Cheatele, F. R. C. S.
Henri Coutard, M. D.

Arthur H. Compton, Ph. D.
Ludvig Hektoen, M. D.

The Chicago Tumor Institute offers consultation service to physicians and radiation facilities to patients suffering from neoplastic diseases. Graduate instruction in radiotherapy is offered to qualified physicians.

The Radiation Equipment includes:

- One 220 k.v. x-ray apparatus
- One 400 k.v. x-ray apparatus
- One 500 k.v. x-ray apparatus
- One 10 gram radium bomb.

MORPHINE AND OTHER DRUG ADDICTIONS

Selected patients who wish to make good and learn how to keep well; methods easy, regular, humane.
Dr. Weirick's Sanitarium, Elgin, Ill.

THE STOKES HOSPITAL

LOUISVILLE, KY.

For the treatment of

Alcoholism. Drug Addictions, Mental and Nervous Diseases

Phone Highland 2101 or Write for Rates and Folder

E. W. Stokes, Medical Director

WANTED: Doctor, licensed Illinois. With or without wife. Resident type. Stay on premises. Combination home and institution. Good opportunity. Address, Mr. Odell, 1869 N. Damen Ave., Chicago.

A surgeon, an architect and a politician were arguing as to whose profession was the oldest.

Said the surgeon: "Eve was made from Adam's rib, and that surely was a surgical operation."

"Maybe," said the architect, "but prior to that, order was created out of chaos, and that was an architectural job."

"But," interrupted the politician proudly, "somebody must have created the chaos!"



SINCE 1902

PHYSICIANS CASUALTY ASSOCIATION

PHYSICIANS HEALTH ASSOCIATION



SINCE 1912

Hospital
Accident
Sickness

INSURANCE

FOR ETHICAL PRACTITIONERS EXCLUSIVELY
(50,000 policies in force)

LIBERAL HOSPITAL EXPENSE COVERAGE FOR
\$10.00 PER YEAR

\$5,000.00 accidental death	For
\$25.00 weekly indemnity, accident and sickness	\$33.00 per year
\$10,000.00 accidental death	For
\$50.00 weekly indemnity, accident and sickness	\$66.00 per year
\$15,000.00 accidental death	For
\$75.00 weekly indemnity, accident and sickness	\$99.00 per year

37 years under the same management
\$1,700,000. INVESTED ASSETS
\$9,000,000. PAID FOR CLAIMS
\$200,000. deposited with State of Nebraska for protection of our members.

Disability need not be incurred in line of duty—benefits from the beginning day of disability.

SEND FOR APPLICATIONS, DOCTOR, TO
400 FIRST NATIONAL BANK BLDG.
OMAHA, NEBRASKA

Radium Rental Service

By

THE PHYSICIANS RADIUM ASSOCIATION

Organized for the purpose of making radium available to physicians to be used in the treatment of their patients. Radium loaned to physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

The Physicians Radium Association

Room 1307—55 East Washington St.,
Pittsfield Bldg., CHICAGO, ILL.
Telephones: Central 2268-2269
Wm. L. Brown, M.D., Director

HORMOTONE "T"

direct therapy in
AMENORRHEA
IRREGULAR MENSTRUATION
MENOPAUSE

Bottles of 40 tablets

Each tablet contains approximately 200 international units of biologically standardized ovarian follicular hormones.



G. W. CARNRICK CO.

20 Mt. Pleasant Ave., Newark, N. J.



Hospital Facilities
 & Personnel for

**NERVOUS & MENTAL
 DISORDERS**

G. R. LOVE, M. D.,
 Physician in Charge



IN WHOOPING COUGH



ELIXIR BROMAURATE

**IS GIVING EXCELLENT
 THERAPEUTIC RESULTS**

Cuts short the period of the illness and relieves the distressing, spasmodic cough. Equally valuable in other Persistent Coughs and in Bronchitis and Bronchial Asthma. In four-ounce original bottles. A teaspoonful every 3 to 4 hours.

THIRD EDITION:

A new, interesting booklet (3rd edition) on "Whooping Cough and Its Treatment" is just off the press. Drop us a card for a copy. Sent with our compliments. Gold Pharmacal Co., New York

NORTH SHORE HEALTH RESORT

Winnetka, Illinois

A general medical sanitarium devoted to:

Care and treatment of patients with Cardiovascular, Renal, and Gastro-intestinal Diseases—Diabetes Mellitus and other Metabolic Disorders—Primary and Secondary Anemias—Allergic Conditions.

Care of the aged, convalescents, and patients with mild nervous disorders.

Modern therapy of Arthritis.

PHYSIOTHERAPY of all types including FEVER THERAPY

A homelike sanitarium located in a quiet spot along Lake Michigan within easy traveling distance from Chicago.

H. E. Hickman, M. D., Medical Director

A. L. Darche, M. D., Associate Physician

THE EDWARD SANATORIUM

ESTABLISHED IN 1907 BY DR. THEODORE B. SACHS

Jerome R. Head, M. D., Medical Director

Alberto L. de Guevara, M. D., Associate Medical Director

NAPERVILLE, ILLINOIS

An institution affiliated with the Chicago Tuberculosis Institute for the treatment, by modern methods, of selected cases of Pulmonary Tuberculosis.

Attractive location and surroundings.

Buildings and equipment modern and adequate for all emergencies.

Well trained staff of physicians and nurses.

Physicians are invited to visit the Sanatorium at any time. They are assured of every professional courtesy and consideration.

For detailed information, rates and rules for admission apply to—

THE CHICAGO TUBERCULOSIS INSTITUTE

Phone Central 8316

Rooms 504

360 North Michigan Ave.

Chicago

"There are three stages

in the history of every medical discovery. When it is first announced, people say that it is not true. Then a little later, when its truth has been borne on them so that it can no longer be denied, they say that it is not important. After that, if its importance becomes sufficiently obvious, they say 'anyhow, it is not new.'"

The HARROWER LABORATORY, Inc., Glendale, California

NEW YORK

CHICAGO

DALLAS

PORTLAND

The idea behind ADREMIN (formerly Adreno-Spermin) therapy in hypoadrenia has gone through all these stages. ADREMIN is available in tablets, capsules, drops, and in solution for intramuscular injection. Prescribe ADREMIN, 1 tablet q.i.d., as an endocrine tonic in asthenia and the "fatigue syndrome."

PROFESSIONAL PROTECTION



A DOCTOR SAYS:

"I certainly do not enjoy thinking of the loss of sleep and nervous strain I would have undergone were it not for your policy. This would certainly have shown in my work and have cost me more in dollars than your policy will cost me for the next twenty years."

THE

MEDICAL PROTECTIVE COMPANY

OF FORT WAYNE, INDIANA

WHEATON, ILLINOIS

Behind MERCUROCHROME

(dibrom-oxymercuri-fluorescein-sodium)



is a background of

Precise manufacturing methods insuring uniformity

Controlled laboratory investigation

Chemical and biological control of each lot produced

Extensive clinical application

Thirteen years' acceptance by the Council of Pharmacy and Chemistry of the American Medical Association



A booklet summarizing the important reports on Mercurochrome and describing its various uses will be sent to physicians on request.

Hynson, Westcott & Dunning, Inc.
BALTIMORE, MARYLAND

CONTENTS—Continued

Medical Economics. <i>E. S. Hamilton</i>	11
Final Legislative Bulletin	12

CORRESPONDENCE

Civil Service Classification. <i>W. Emery Lancaster</i> ..	14
Early Use of Murphy Button. <i>Philip H. Kreuscher</i>	15
American Congress of Physical Therapy.....	15
American Congress on Obstetrics	15
Institute on Blood	15
Post-Graduate Courses in Obstetrics.....	16
Brinkley Loses Suit .....	..
Illinois Physicians Registered at St. Louis.....	17
Proceedings House of Delegates.....	22
Marriages	96
Personals	96
News Notes	98
Deaths	99

LOSS OF HEARING COMMON OVER 20

(Copyright, 1939, by Science Service)

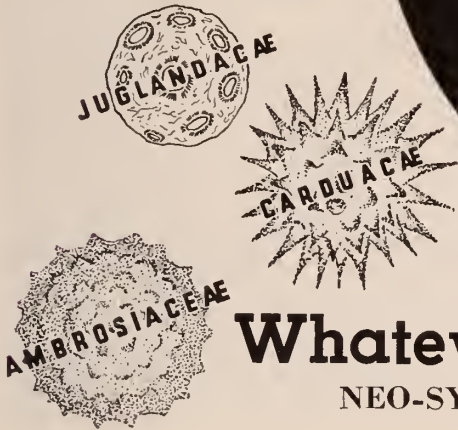
WASHINGTON—If you are over 20 years old, the chances are you are partially deaf. And you can blame the infections of certain diseases, including the common head cold, influenza, scarlet fever, meningitis, diphtheria. Three-fourths of the population are either totally or partially deaf.

This is the news made public here by the U. S. Public Health Service in a series of four bulletins reporting a study of hearing in connection with the National Health Survey. The hearing part of the survey was conducted by Dr. Willis C. Beasley, senior administrative officer of the Public Health Service, in cooperation with prominent ear specialists.

Of all the 9,000 persons who were given hearing tests and ear, nose, and throat examinations in the Health Survey, only 52 per cent. claimed to have normal hearing. But nearly half (44 per cent.) of these who claimed normal hearing were actually partially deaf. They were unaware of their defect because the deafness occurs principally in the very high tones, above the pitch of ordinary speech. The highest notes of the violin, flute, and piccolo are lost for them.

This loss of hearing, beginning at the age of 20, increases at a regular rate as time goes on. It is due to an actual degeneration of the nerve of hearing, the examinations revealed.

Hay Fever



Whatever the Cause . . .

NEO-SYNEPHRIN HYDROCHLORIDE

will relieve the Symptoms

With the season's barrage of pollens in the air, it is comforting to know that your hay fever patients may obtain relief from the distressing nasal symptoms.

NEO-SYNEPHRIN HYDROCHLORIDE

(laevo-alpha-hydroxy-beta-methyl-amino-3-hydroxy-ethylbenzene hydrochloride)

Applied topically to the nasal mucosa, Neo-Synephrin Hydrochloride promptly reduces the congestion, diminishes the excessive secretion, and facilitates comfortable breathing.

*Quick Action—Prolonged Effect—Free from Sting—
Well Tolerated—Stable—Convenient*

EMULSION— $\frac{1}{4}\%$ (1-oz. bottle with dropper)
SOLUTION— $\frac{1}{4}\%$ for dropper or spray } 1-oz. bottle
 1% for resistant cases
JELLY — $\frac{1}{2}\%$ (in collapsible tubes with applicator)

FREDERICK STEARNS & COMPANY

DETROIT, MICHIGAN

NEW YORK

KANSAS CITY

SAN FRANCISCO

WINDSOR, CANADA

SYDNEY, AUSTRALIA



SOLUTION

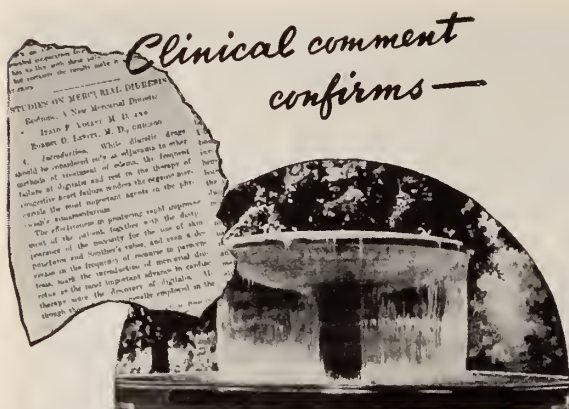


EMULSION



JELLY





-ESIDRONE, "Ciba" as "a Very Effective Mercurial Diuretic"*

*Corroborating previous clinical approval, Volini and Levitt find Esidrone to be a "very effective mercurial diuretic" and non-toxic in therapeutic dosage. No vein thrombosis or uremia followed its use. The heart action "unquestionably improved" with Esidrone in various cases of cardiac edema. (Ill. Med. J., Oct. 1938.) Esidrone is also indicated in dropsy and ascites due to cardiac failure or liver cirrhosis.

A Cascade of Liters from 1 cc. of Esidrone

As much as 5 liters of urine have been eliminated within 24 hours after intravenous or intramuscular injection of 1 cc. (containing 0.14 gm.) of Esidrone** (the sodium salt of pyridine - dicarboxy - β - mercuri - ω - hydroxy-propylamide-theophylline). Available in cartons of 5 and 20 one-cc. ampules.

**Trade Mark Reg. U. S. Pat. Off.

LITERATURE UPON REQUEST



Ciba Pharmaceutical Products, Inc.
Summit, New Jersey

Book Reviews

A TEXT BOOK OF OBSTETRICS WITH SPECIAL REFERENCE TO NURSING CARE. By Charles B. Reed, M. D., with 209 illustrations. St. Louis. The C. V. Mosby Company. 1939. Price, \$3.00.

In this work the author has put in concise and uncomplicated form the present day attitude towards obstetrics as an art and as a science. Such a plan means that the nurse should have not only a basic knowledge of her own highly important duties but also a reasonable comprehension of what the doctor is aiming to accomplish so that she can furnish practical assistance in routine procedure and be prepared as well for emergencies.

To acquire these principles thoroughly, a rather wide technical summary of the facts, theories, and the more common obstetric maneuvers has been laid down for school instruction together with brief descriptions of the aims, purposes and methods of operative intervention.

The author has covered every phase of the subject in an up-to-date scientific manner. The work will be found valuable to the student, and to the graduate nurse, not only for its contents but also for its brevity, clearness and from unnecessary material which merely confuses the understanding.

THE NEW INTERNATIONAL CLINICS. Edited by George Morris Piersol, M. D. Vol. II. New Series Two. Philadelphia, Montreal, New York. J. B. Lippincott Company. 1939.

This work is made up of original contributions; clinics and evaluated reviews of current advances in the medical arts by leading specialists throughout the United States.

DISEASES OF THE NOSE AND THROAT. By Charles J. Imperatori, M. D., and Herman J. Burman, M. D. 420 illustrations. Second edition revised. Philadelphia, London, Montreal. J. B. Lippincott Company. 1939. Price, \$7.00.

The background and experience of the authors, the thorough treatment of the subject and the excellence and abundance of illustrations make this a text book of really commanding importance.

The book has been completely revised and rearranged for more forceful teaching presentation and more ready accessibility for general use. In this edition much new material has been added and much of the work has been completely rewritten.

LIFE AND LETTERS OF DR. WILLIAM BEAUMONT. By Jesse S. Meyer, M. D. with an introduction by Sir William Osler, B. T., M. D. St. Louis. The C. V. Mosby Company. 1939. Price

This monumental work was originally published in 1912, after the author, the late Dr. Jesse S. Meyer had struggled for years with a mass of interesting material gathered from many sources. Because of the increas-

Drink
Coca-Cola
Delicious and Refreshing

**THE
DRINK
EVERYBODY
KNOWS**

COPYRIGHT 1939, THE COCA-COLA COMPANY

ing interest in Beaumont and his work during recent years the publishers decided to reprint the book in its present form with some corrections and a few additions.

Dr. William Beaumont, the pioneer American physiologist, accomplished under most discouraging circumstances most remarkable medical research of all time.

RURAL MEDICINE. Proceedings of the conference held at Cooperstown, New York, October 7 and 8, 1938. Springfield, Illinois. Baltimore, Maryland. Charles C. Thomas. 1939. Price, \$3.50, postpaid.

The author states that even a cursory comparison of conditions of life in rural neighborhoods with those of urban communities reveals at once many examples of mal distribution of the benefits of modern civilization; very striking inequalities exist in the amount, quality and availability of economic, educational, recreational and medical advantages.

This book contains discussions of the problems of Rural Medicine, a true and large picture of the rural morbidity, a subject on which there has been all too little sound scientific scrutiny, is given. Practical ideas and suggestions on Health Department Programs, School Health Programs in Rural Areas, Postgraduate Medical Education in Rural Areas, and Economics of Rural Medicine make up the four parts of this book.

These distinct problems which relate to the health of rural communities are presented and discussed by specialists.

Here at last is a broad approach which furnishes reliable factual materials to rural medicine.

STANDARD BODY PARTS ADJUSTMENT GUIDE. Published by the Insurance Statistical Service of North America, 542 Rush St., Chicago, Illinois. 1939. Single copy, \$8.00, including ten years revision service.

This book is designed as an aid in correcting an anomalous situation confronting claim adjusters, lawyers, and insurance officials when called upon to interpret the nature and background of an industrial injury or an occupational disease. The adjuster, being a layman, needs to acquire a practical physiological knowledge of the human body so that he may intelligently discuss the CLAIMANT'S CASE with physician, company officials, industrial commission, claimant or his representatives. The evaluation section of this work sets out a succinct and salient summary of the functional significance of all parts of the body. It proposes a plausible and persuasive percentage perception of the various loss-of-use conditions likely to confront physician and adjuster. The work provides the adjuster with a technique for evaluating the medical significance of a disability, and at the same time for appraising the monetary aspect of a case.

THE CLINICAL AND EXPERIMENTAL USE OF SULFANILAMIDE, SULFAPYRIDINE AND ALLIED COMPOUNDS. By Perrin H. Long, M. D., and Eleanor A. Bliss, ScD. New York. The MacMillan Company. 1939. Price, \$3.50.

Astonishing therapeutic results have been obtained by the use of these two drugs and this book will be a splendid acquisition to any medical library.

Each type and form of disease in which these drugs are of therapeutic value is taken up in detail, and the methods and duration of treatment are outlined. A thorough survey and the significance of the various types of toxic manifestations resulting from the use of these compounds is given, together with directions with their prevention, early recognition and treatment.

TREATMENT BY DIET. By Clifford J. Barborka, M. D. Illustrated. Fourth edition, revised. Philadelphia-London-Montreal. J. B. Lippincott Company. 1939. Price, \$5.00.

This is a work of 642 pages, illustrated. The fact that it has gone through four editions in rapid succession speaks volumes in its favor.

Features of this edition are an entirely new chapter on Addison's Disease, a revised section on vitamins—and vitally important new material on gall bladder disease, liver disease, peptic ulcer, nephritis, diabetes, gastritis, and allergy.

MEDICAL JURISPRUDENCE AND TOXICOLOGY. By William D. McNally, A. B., M. D., Assistant Professor of Medicine & Lecturer in Toxicology, Rush Medical College, University of Chicago; Attending Toxicologist, Presbyterian Hospital; Attending Staff, St. Joseph's Hospital, Chicago. 386 pages with 23 illustrations. Philadelphia and London: W. B. Saunders Company, 1939. Cloth, \$3.75 net.

To meet a demand for a brief and concise text book of Medical Jurisprudence and Toxicology, the author has condensed this volume from his larger book, "Toxicology." Practicing physicians, medical students, toxicologists and all others concerned with medical jurisprudence and toxicology will find this new book a concise but unusually comprehensive presentation. It is strictly up-to-date.

The first part of this book gives practical consideration to the essential facts of Medical Jurisprudence—how to give testimony, signs of death, methods of identifying the dead, how to determine the cause of sudden death from natural causes as well as from injuries, burns, abortion, the technic of laboratory tests used in fixing legal responsibility and the medicolegal aspects of x-ray and radium.

Part II—covering 270 pages—deals entirely with Toxicology. Dr. McNally takes up those drugs and chemicals of most common occurrence and includes industrial poisons as well as those found in suicidal, homicidal and accidental poisoning.

He tells how to diagnose poisonings, giving tables of

symptoms that may appear as a result of poisons or of disease. He gives the urine changes from poison, forensic facts that will help you in proving a point. The properties of each poison, its symptoms, the fatal dosage and fatal period are clearly described. Treatment and antidotes are included in full detail. Post-mortem appearances are given and also the tests that should be used for establishing the cause of death. A practical book!

HEALTH OFFICERS' MANUAL. By J. C. Geiger, M. D., Dr. P. H., Sc. D., LL. D., Director, Department of Public Health, City and County of San Francisco, California. 148 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1939. Cloth, \$1.50 net.

This new Manual is intended especially for Health Officers, public health administrators and all others concerned in the administrative and technical problems of organized public health work.

WHAT IT MEANS TO BE A DOCTOR. By Dwight Anderson. New York, N. Y. Public Relations Bureau Medical Society of the State of New York. 1939. Price \$1.00—Paper cover, 25 cents.

This work appears in three parts, as follows:

Part I, What It Means — — — to Doctors.

Part II, What It Means to Doctor Edgar James.

Part III, What It Means to the Public.

This volume is a brief treatise aiming to convey an impression of the doctor's way of life; his character, his education, his ability, and his skill. A questionnaire which asked four questions was sent to 500 general practitioners, surgeons, pediatricians, and many other specialists throughout the country. The questions:

1. What qualities of mind and character do you consider most important for the practice of medicine as a profession?
2. How old were you (approximately) when you determined to be a doctor?
3. What decided you? (Please explain the incident, influence or reason which resulted in fixing your ambition.)
4. If you had a son, would you wish him to select medicine as a career?

The replies are digested (page 9). The author then pursued inquiries which are made a part of the book in the narrative of the careers of three typical personalities, traced through childhood, boyhood, medical school, hospital training and private practice, and a little way into some of the work of his medical societies and scientific organizations.

"As we come to understand him better, of one thing we are increasingly aware: that what happens to the doctor also determines what happens to the patient.

"Their interests are the same."

"The public is asked to judge the doctor on meagre information, and to decide whether he is right or wrong in resisting the tendency toward state medicine. Without more knowledge of him it is difficult to weigh the value of his opinion."

Serum's promising new ally—

SULFAPYRIDINE

Lederle

IT HAS ALREADY BECOME a commonplace experience in early and uncomplicated cases to have a pneumonia patient's temperature drop dramatically to normal in 24 to 36 hours after beginning the administration of Sulfapyridine. Such cases then usually proceed to uneventful recovery.

On the other hand, Pneumonia, "Captain of the Men of Death" is not uniformly to be disposed of so simply! The composite advice of eminent specialists embodied in the Lederle directions for use says:

- 1—collect sputum for typing;
- 2—take specimens for blood culture and blood count;
- 3—then begin administration of Sulfapyridine;

But give serum also:

- if patient's temperature, pulse rate and respiration are not essentially normal within 24-36 hours after beginning the drug treatment;
- or if the case is of 3 days' or more duration;
- or if bacteremia is present;
- or if the patient is over 40;
- or if two or more lobes are involved;
- or if patient is pregnant or in first week of puerperium;
- or if, on account of nausea, patient cannot tolerate Sulfapyridine.

Finally, watch for contraindications for Sulfapyridine; this requires daily blood counts and urine analyses. Sulfapyridine is toxic to some and patients should be constantly supervised to detect a possible occurrence of hemolytic anemia, hematuria, or leukopenia. Nausea, the most constant side-effect, is not a contraindication.

LEDERLE LABORATORIES, INC.
30 ROCKEFELLER PLAZA NEW YORK, N. Y.



Lederle's exhibit on Pneumonia, surfaced entirely with white laminated "Beetle", occupies a commanding position in the Medicine and Public Health Building.

Rogers Memorial Sanitarium

(Formerly *Oconomowoc Health
Resort*)

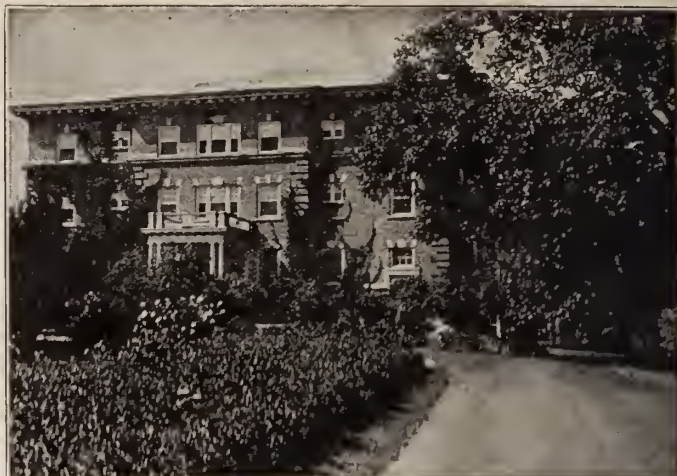
Oconomowoc, Wisconsin

Phone 448

RESIDENT PHYSICIANS

JAMES C. HASSALL, M. D.
Medical Director

OWEN C. CLARK, M. D.
Assistant Physician



Founded in 1907 for the treatment of NERVOUS and MENTAL DISEASES

Fireproof building; accommodations modern and homelike. Fifty acres of park with beautiful views over lakes. Every essential for treatment provided, including hydro- and occupational therapy under trained personnel. Number of patients limited, assuring personal attention from the staff.

JAMES C. HASSALL, M. D.

BOARD OF TRUSTEES

T. H. SPENCE
MITCHELL MACKIE
MACKEY WELLS
Milwaukee, Wisconsin

PETER BASSOE, M. D.
Chicago, Illinois
W. S. MIDDLETON, M. D.
Madison, Wisconsin

MICHELL FARM



MICHELL FARM
Mild Nervous and Mental
Diseases

MICHELL SANITARIUM
Severe Nervous and Mental
Drug and Alcoholic Cases

Licensed by the State of Illinois

George W. Michell, M.D., Medical Director; Helen C. Coyle, M.D., Psychiatrist
Wm. H. Holmes, M.D., Chicago, Med. Con.

Selected Cases of Schizophrenia (Dementia Praecox) received for Insulin Shock Therapy

Literature on Request • 106 N. Glen Oak Ave., Peoria, Illinois

Please mention ILLINOIS MEDICAL JOURNAL when writing to advertisers

Illinois Medical Journal

OWNED AND PUBLISHED BY THE MEDICAL PROFESSION OF ILLINOIS
Office of Publication 715 Lake Street, Oak Park, Illinois; Editorial and Executive Office 6221 Kenmore Ave., Chicago

Vol. 76, No. 2

AUGUST, 1939

\$3.00 a Year

CONTENTS:

Editorials (For Titles See Extended Table of Contents) 101

ORIGINAL ARTICLES

Integration of Personality Factor in Diagnosis and Treatment. *Leroy E. Parkins, M. D., Boston.* 119
Roentgen Re Lesions of Larynx Diagnosis. *Adolph Hartung, M. D., Chicago.* 125
Roentgen Therapy. *T. J. Wachowski, M. D., Chicago.* 128
Maxillary Sinusitis Re Dental Surgery. *J. Sheldon Clark, M. D., Freeport.* 130
Current Conceptions in Epilepsy. *Meyer Broten, M. D., Chicago.* 132

Measles in 1938. *Archibald L. Hoyne, M. D., Chicago.* 136
Treatment of Burns. *Charles L. Patton, M. D., Springfield.* 141
Poliomyelitis Re Antistreptococic Serum. *Edward C. Rosnow, M. D., Rochester, Minnesota.* 144
Tuberculosis in the Psychotic. *S. A. Leader, M. D., North Chicago.* 149
Differential Diagnosis of Chronic Abdominal Disease. *Herbert Payne Miller, M. D., Rock Island.* 154
Tularemia. *P. A. Steele, M. D., Decatur.* 156
Treatment of Compound Fractures. *Carlo S. Scuderi, M. D., Chicago.* 160
Cerebral Hemorrhage in the Newborn. *Heyworth N. Sanford, M. D., Chicago.* 162

(Continued on page 22)

Entered as Second-class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 8, 1879. Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 8, 1917, authorized July 15, 1918.

MILWAUKEE SANITARIUM, Wauwatosa, Wis. For NERVOUS DISORDERS

(Chicago Office—1823 Marshall Field Annex
Wednesdays, 1-3 P. M.) Central 1162.

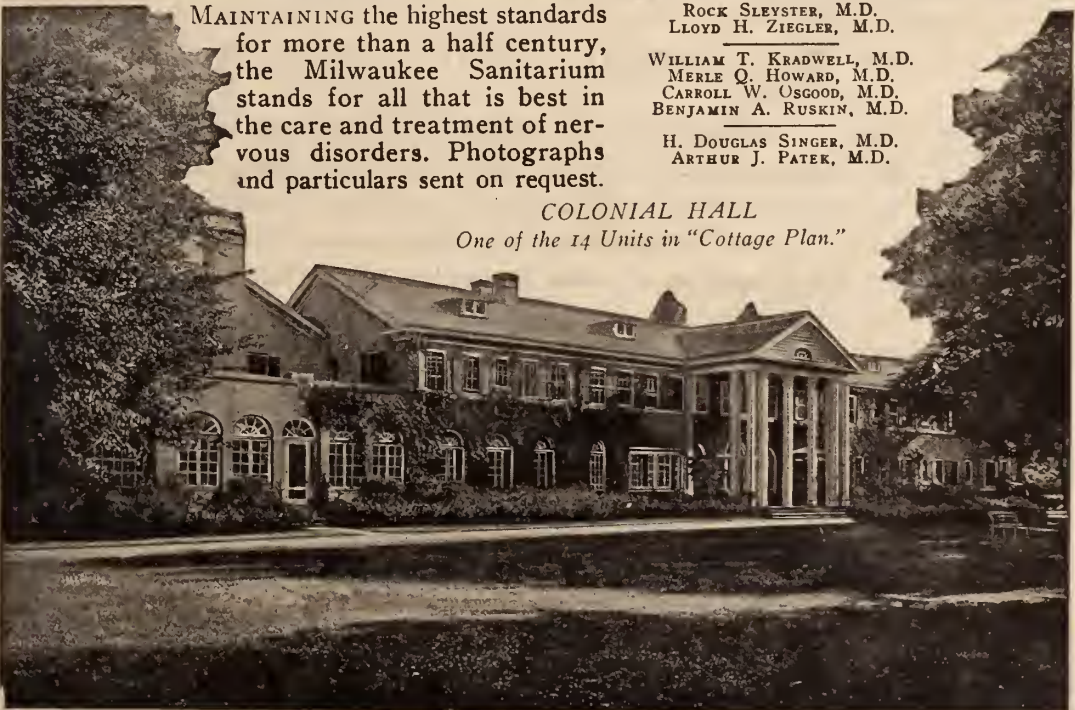
MAINTAINING the highest standards for more than a half century, the Milwaukee Sanitarium stands for all that is best in the care and treatment of nervous disorders. Photographs and particulars sent on request.

ROCK SLEYSER, M.D.
LLOYD H. ZIEGLER, M.D.

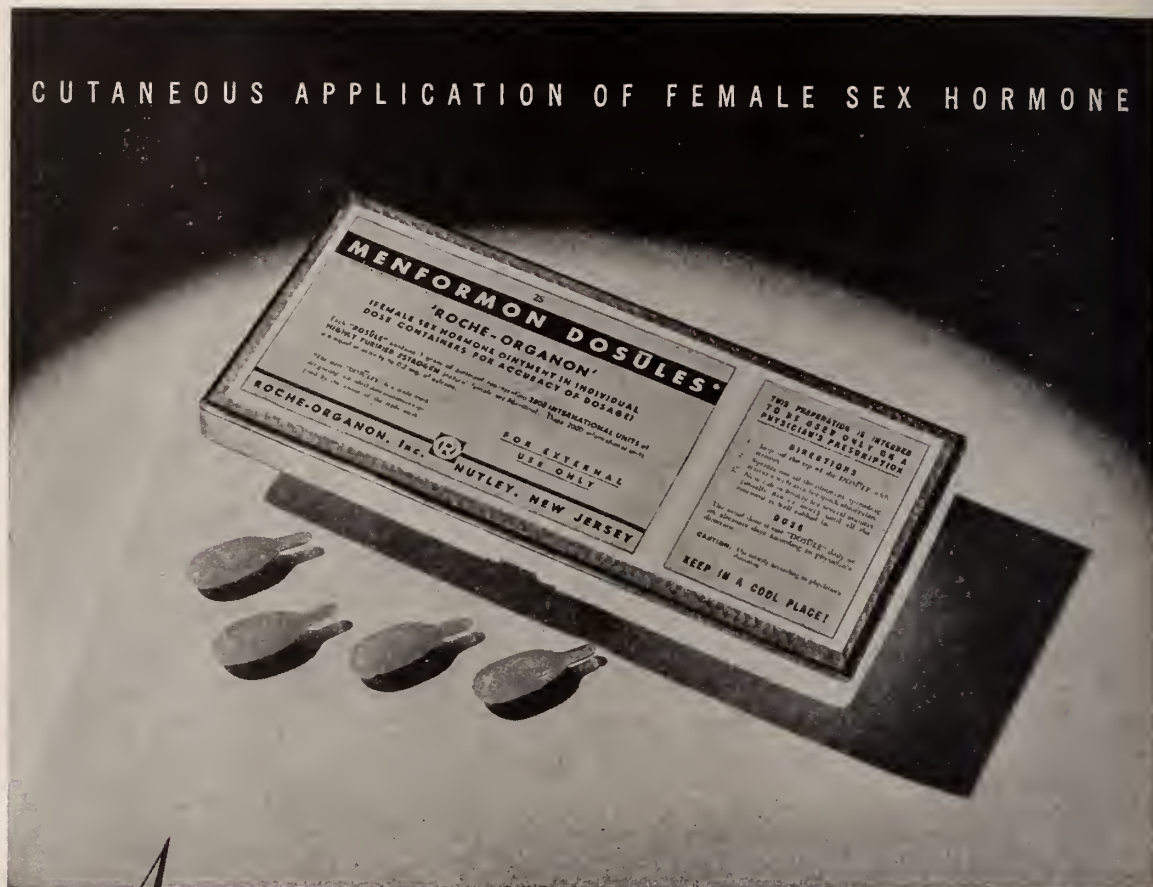
WILLIAM T. KRADWELL, M.D.
MERLE Q. HOWARD, M.D.
CARROLL W. OSGOOD, M.D.
BENJAMIN A. RUSKIN, M.D.

H. DOUGLAS SINGER, M.D.
ARTHUR J. PATEK, M.D.

COLONIAL HALL
One of the 14 Units in "Cottage Plan."



CUTANEOUS APPLICATION OF FEMALE SEX HORMONE



Announcing MENFORMON DOSULES

FOR THE MENOPAUSE, PRURITUS VULVAE, ATROPHIC CHANGES, ETC.

Adequate pharmacological and clinical data show that the action of cutaneously applied sex hormones (male or female) is superior to that of identical doses administered orally, and is approximately 50% of that of the same doses given by injection. The well-known success of Neo-Hombreol Dosules, testosterone propionate ointment 'Roche-Organon', led to a demand for a similar preparation of the female sex (estrogenic) hormone.

We therefore take pleasure in announcing the availability of Menformon Dosules, estrogenic ointment for use in place of oral medication in the treatment of disorders due to mild and moderate estrogenic deficiencies, as maintenance therapy in disorders brought under control by parenteral therapy, and as a supplement to parenteral therapy in severe disorders due to marked estrogenic deficiency. Literature gladly sent upon request.

Each Dosule (sealed gelatin capsule) contains 1 Gm. of Menformon Ointment, representing 2000 international units of a highly purified estrogen (natural female sex hormone). There are 25 Dosules to a box. Instruct patients to snip off the tip of the Dosule with a pair of scissors, squeeze out the ointment and spread it on a wide area of skin, then rub in briskly for several minutes.

ROCHE-ORGANON, INC., ROCHE PARK, NUTLEY, NEW JERSEY

In Canada: Roche-Organon (Canada) Ltd., 286 St. Paul St., West, Montreal, P. Q.

PRESENT VITAMIN STANDARDS AND UNITS

● Early in this decade the first International Standards of Reference and Units for vitamins defined in terms of definite quantities of the standard materials were tentatively adopted by the Permanent Commission on Biological Standardization of the League of Nations. At subsequent meetings this Commission has replaced certain of the original standard materials by the pure vitamins or preparations considered to be better adapted as standards of reference. However, the new units defined in terms of the new standards represent approximately the same biological activities as the original International Units.

Believing that the present units and the standards of reference upon which they are based will be of interest, they have been tabulated and defined:

Vitamin A

The standard of reference (1) is a solution of purified beta-carotene in an inert oil, of such concentration that one gram of solution contains 300 micrograms (0.300 mg.) of beta-carotene. The International Unit of vitamin A is the vitamin A activity of 2 mg. of the standard solution, or 0.6 micrograms of beta-carotene.

Vitamin B₁

The reference standard (2) is the International Standard preparation of thiamin chloride. The International Unit for vitamin B₁ is the antineuritic activity of three micrograms (3 γ) of the International Standard.

Vitamin C

The reference standard (1) for vitamin C is a specified sample of crystalline levo-

ascorbic acid. The International Unit for vitamin C is the vitamin C activity of 0.05 mg. of this standard.

Vitamin D

The reference standard (1) for vitamin D is a solution of irradiated ergosterol, prepared under specified conditions at the National Institute for Medical Research (London). The International Unit for vitamin D is the vitamin D activity of 1.0 mg. of this standard solution.

The International System of expressing vitamin values will undoubtedly soon become official for all authoritative agencies which concern themselves with the establishment of vitamin standards and units. Reference standards for riboflavin and nicotinic acid—both of which are of significance in human nutrition—have not been defined. However, the use of units such as micrograms or milligrams of the crystalline compounds to express riboflavin and nicotinic acid values is becoming increasingly prevalent.

The use of vitamin units of definite value permits correlation of various phases of vitamin research, particularly those phases relating to the vitamin contents of common foods and to the quantitative human requirement for these essential food factors. Although vitamin supplementation of the diet may be desirable under certain circumstances, it is apparent (3) that a well planned mixed diet is most suitable for supplying optimal quantities of the vitamins along with the other essential nutrients. The established vitamin values of canned foods (4) serve as an indication of their usefulness in formulating such diets.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

- (1) 1935. Nutrition Abstracts and Reviews, 4, 705.
- (2) 1938. League of Nations Bulletin of the Health Organization, 7, 882.
- (3) 1938. J. Am. Diet. Assn., 14, 1.
- 1938. J. Am. Diet. Assn., 14, 8.

- (4) 1935. J. Home Econ., 27, 658.
- 1935. J. Nutrition, 9, 667.
- 1938. J. Am. Med. Assn., 110, 650.
- 1938. Nutrition Abstracts and Reviews, 8, 281.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the fiftieth in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

WHY

THE EMULSION...

Petrolagar FOR CONSTIPATION

Will not coat the feces
with oily film.

#5

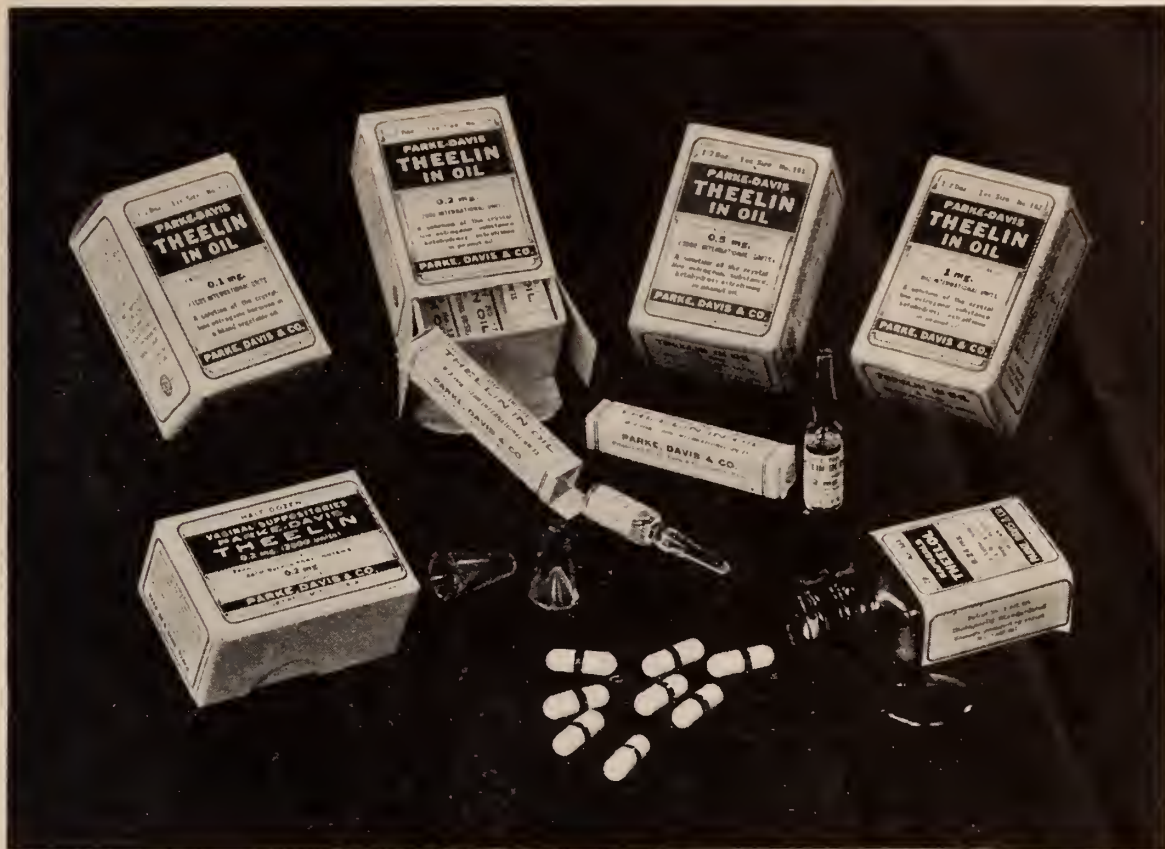
1. Petrolagar is more palatable. Easier to take by patients with aversion to plain oil—may be thinned by dilution.
2. Miscible in aqueous solutions. Mixes with gastro-intestinal contents to form a homogeneous mass.
3. Does not coat intestinal mucosa. Petrolagar is an aqueous suspension of mineral oil — oil in water emulsion.
4. No accumulation of oil in folds of mucosa.
6. Does not interfere with secretion or absorption.
7. Augments intestinal contents by supplying an unabsorbable fluid.
8. More even distribution and dissemination of oil with gastro-intestinal contents.
9. Assures a more normal fecal consistency.
10. Less likely to leak.
11. Provides comfortable bowel action.
12. Makes possible five types of Petrolagar to select from to meet the special needs of Bowel Management.

Petrolagar — Liquid petrolatum 65 cc. emulsified with 0.4 Gm. agar in a menstruum to make 100 cc.



Petrolagar

Petrolagar Laboratories, Inc. • 8134 McCormick Boulevard • Chicago, Illinois



THEELIN • THEELOL

ESTROGENS IN PURE CRYSTALLINE FORM

Isolation of hormones to crystalline purity is a goal of endocrine research. The advantages of such products—precision in dosage and dependability of therapeutic effects—are universally recognized.

Theelin and Theelol are crystalline estrogenic substances manu-

factured by Parke, Davis & Company under license from St. Louis University. They are widely used to control menopausal symptoms and sequelae (kraurosis, pruritus vulvae, atrophic

senile vaginitis and vaginal ulceration), and gonorrheal vaginitis in children.

Theelin (ketoxyestratriene) is available as Theelin in Oil Ampoules in potencies of 1000, 2000, 5000, and 10,000 international units each—in boxes of six and fifty 1-cc. ampoules. Theelin Vaginal Suppositories, 2000 international units each, are supplied in boxes of six and fifty. Theelol (trihydroxyestratriene) is available as Kapseals Theelol, 0.06 milligram and 0.12 milligram—in bottles of 20, 100, and 250.

PARKE, DAVIS & COMPANY • Detroit, Michigan

The World's Largest Makers of Pharmaceutical and Biological Products

Alleviate poison ivy dermatitis with IVYOL

FOR TREATMENT

In cases of average susceptibility, the contents of one syringe of Ivyol is administered every 24 hours, to be repeated until the symptoms are relieved. Four doses are usually necessary.

FOR PROPHYLAXIS

The contents of one syringe of Ivyol is administered intramuscularly or deep subcutaneously each week for four weeks.



"For the Conservation of Life"

MULFORD BIOLOGICAL LABORATORIES

Sharp & Dohme

PHILADELPHIA



To relieve the pruritus and to control the extension of the dermatitis caused by poison ivy or poison oak, many physicians rely upon Ivyol.

Ivyol is supplied in two forms—Ivyol (Poison Ivy Extract) and Ivyol (Poison Oak Extract). They are solutions of the active principles derived from poison ivy and poison oak respectively, in sterile olive oil with 2% camphor as a preservative. Because of its olive oil base, the administration of Ivyol by deep subcutaneous or intramuscular injection is comparatively free from pain.

Ivyol is available in packages of one and four miniature syringes. Each syringe represents a single dose.



When the baby travels there is no interruption in the feeding schedule. One airline alone fed 84 S. M. A. infants during the past three months.

THIS TRAVELING MAN EATS

S. M. A. FEEDINGS ARE THE SAME EVERYWHERE

Whether S.M.A. is prepared in New York or California, or even enroute, the feedings are always the same—like breast milk.

In any climate, S.M.A. remains fresh and sweet, because it is nitrogen packed to prevent oxidation or change in its chemical and physical composition.

INFANTS RELISH S. M. A. — DIGEST IT EASILY — THRIVE ON IT!

S. M. A. is a food for infants — derived from tuberculin tested cows' milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride;



altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and in physical properties.



Pure Vitamins for

SPECIFIC PURPOSES

● The importance of highly potent preparations of the specific vitamins for the prevention and treatment of deficiency diseases is generally recognized. The requirements in various types of avitaminosis are adequately met by the Winthrop preparations of pure vitamin products.

BECETAX*—Pure synthetic vitamins B₁ and C. For prophylaxis of combined deficiency of vitamins B₁ and C. A rational dietary supplement for infants, children and adults, particularly for persons restricted to diets containing an inadequate supply of the antineuritic and antiscorbutic factors.

BETAXIN*—Synthetic crystalline vitamin B₁ hydrochloride. Besides beriberi, the most prominent manifestations of B₁ avitaminosis are loss of appetite, intestinal atony, malnutrition, restricted growth, polyneuritis, and certain forms of neuralgia and neuritic disorders.

CANTAXIN*—Synthetic vitamin C. A deficiency of this dietary essential may produce scurvy and less severe but more common subclinical states characterized by malnutrition, hemorrhagic tendency and anemia. Daily administration is advisable because vitamin C is not usually stored by the body.

DRISDOL* in Propylene Glycol—Non-oily, milk-soluble vitamin D₂ preparation. Used in prophylaxis and treatment of rickets, osteomalacia and tetany.

DRISDOL* with Vitamin A Capsules—Vitamins A and D in sesame oil. For the prevention and treatment of conditions associated with vitamin A and D deficiency. These include xerophthalmia, night blindness, retarded growth and malnutrition, certain cutaneous keratotic lesions, infantile rickets, tetany and osteomalacia. Also serviceable for assuring adequate supply of these vitamins in periods of increased requirement, as during childhood, pregnancy and lactation.

*Reg. U.S. Pat. Off. & Canada

WINTHROP CHEMICAL COMPANY, INC.

Pharmaceuticals of merit for the physician

NEW YORK, N. Y.

WINDSOR, ONT.

Factories: Rensselaer, N. Y. — Windsor, Ont.



Mandelic Acid Therapy

A Simple, Convenient Treatment for Urinary Infections

MANDELIC ACID THERAPY makes it possible to treat genito-urinary infections economically and conveniently. It is more consistently effective and simpler to use than the ketogenic diet. Hospitalization and dietary restrictions are unnecessary and nausea seldom occurs.

Mandelic Acid Therapy has a further advantage in that it may be used in conditions where the ketogenic diet is contraindicated, such as in gastric or duodenal ulcer, diabetes, arteriosclerosis, and biliary tract disturbances.

TWO SALTS AVAILABLE

Both the calcium and ammonium salts of mandelic acid are available under the Squibb label. Both act to sterilize the urine and produce improvement in acute and chronic cystitis, pyelitis (pyelonephritis) and other infections of the genito-urinary tract—particularly colon bacillus infections.

The calcium salt, while similar in action to the ammonium salt, is more pleasant to take, being more nearly tasteless. Both salts are supplied in *tablet* form exclusively and are therefore more agreeable and pleasant than liquid preparations.

THREE DOSAGE FORMS

Tablets Ammonium Mandelate—uncoated

7½ grains, in bottles of 200 and 1000
3¾ grains, in bottles of 100 and 500

Tablets Ammonium Mandelate—enteric-coated

5 grains, in bottles of 200 and 1000

Tablets Calcium Mandelate—uncoated

7½ grains, in bottles of 200 and 1000

To facilitate the control of urinary acidity, Nitrazine Test Paper and color chart are supplied with all bottles. With Nitrazine*—a sensitive indicator—one may accurately determine the acidity or alkalinity of the urine.

*A Squibb trade-mark.

For literature address the Professional Service Department, 745 Fifth Ave., New York

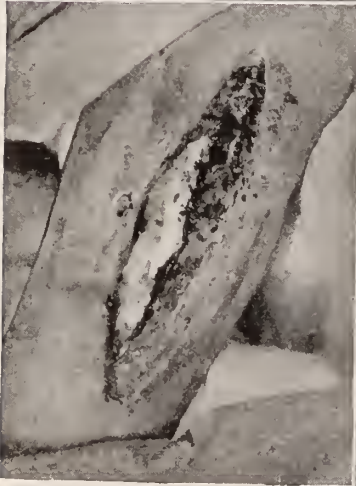


You are cordially invited to visit the exhibit—"Safeguarding Medicinal Products by Research and Control"—sponsored by E. R. Squibb & Sons, in the Medicine and Public Health Building at the New York World's Fair

E. R. SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858

In the Treatment of Osteomyelitis, Slow-Healing Suppurating Wounds, Burns, and Indolent Ulcers

PROLARMON *LIQUID and JELL*



Osteomyelitis of tibia,
treated with Prolarmon
Liquid after sequestrec-
tomy. Notes small scar, and
absence of deformity.



When healing must be initiated, Prolarmon Liquid and Prolarmon Jell exert a profound stimulus upon indolent or infected wounds. Infection is overcome with comparative speed, new granulation tissue appears and gradually fills the wound, and epithelization follows, usually closing the wound with an elastic non-depressed scar.

Prolarmon Liquid is a sterile, relatively stable aqueous solution containing the water-soluble and filtrable substances of comminuted blowfly maggots (*Lucilia sericata*) 5%, boric acid, 4%, sodium chloride, 0.75%, chlorbutanol, 0.5%, calcium gluconate, 0.5%, oxyquinoline sulfate, 0.4%. It is actively germicidal, mildly anesthetic, and deodorant. Its value has been established whenever healing must be stimulated. Prolarmon Jell provides the active ingredients of Prolarmon Liquid in an aqueous jell base. It is of special advantage in ambulatory patients and in areas where a wet dressing is not feasible. ***Physicians are invited to send for samples, literature, and bibliography.

**STIMULATES TISSUE GRANULATION,
OVERCOMES INFECTION, PROMOTES
EPITHELIZATION WITH PLIABLE,
NON-DEPRESSED SCARS**



MAGGOT PRODUCTS COMPANY

222 NORTH BANK DRIVE • CHICAGO, ILLINOIS

PRENATAL SUPPORTS

Of the so-called minor complaints of pregnancy, a contributor to the medical literature* makes the following statement concerning backache: "Backache seemed to be due to several causes. Strain of the lumbar muscles and the vertebral ligaments, due to a change in the center of gravity was often responsible; fallen arches aggravated the complaint. It was relieved by rest in bed. A maternity corset with moderately rigid stays in the back was of benefit . . . Sacro-iliac relaxation as evidenced by pain over the joint was usually unilateral and was referred along the sciatic nerve. Usually a maternity corset would relieve it. This corset should have a strap or other device that will pull it snug over the sacro-iliac region."

Camp prenatal supports are unique in that the overstrap with its buckle (through which the lacings ply) allows the support to be drawn evenly and firmly about the pelvis; thus the pelvic joints are protected and steadied. From such a foundation, the back of the patient is well supported and the abdominal muscles are aided in holding the increasing load in position.



The support shown is designed for all types of build: thin, intermediate and stocky.

*Charles J. Marshall, New York State Journal of Medicine, Vol. 34, Aug. 15, 1934.

CAMP *Supports*

S. H. CAMP & COMPANY, JACKSON, MICHIGAN

Offices in: New York, Chicago, Windsor, Ont., London, England • World's largest manufacturers of surgical supports





Could anything
but the breast
be safer?

BIOLAC—the new *liquid* modified milk for infants—made only from milk of superior quality—is sterilized in vacuum-sealed tins which are then safety-wrapped in cellophane. It stays safe in hot weather—safe when taken traveling.

But—perhaps most important—*Biolac* is not subject to contamination from carbohydrate additions and extra mixing operations...because *Biolac* is complete, except for vitamin C, and requires only the addition of water.

*Only The Breast Is Simpler
Or Quicker Than Biolac*

Dilute *Biolac* with an equal part of boiled water. Offer 2½ ounces per pound of body

weight daily. (Slightly more dilute formulas are, of course, recommended during the newborn period, or when changing from other foods.)

Precise measurement is always assured because *Biolac* is a uniform liquid—so variations in density or in sizes of spoons can never affect formula accuracy.

And in the sum of its nutritional value, ready digestibility, simplicity and safety, *Biolac* actually resembles breast milk more closely than any artificial food or cow's milk modification heretofore available for infant feeding.

Biolac is marketed only through professional channels, sold only in drug stores. No feeding directions are given to the laity. Send coupon for further information.

Biolac



MADE BY

THE BORDEN COMPANY

THE BORDEN COMPANY,
Prescription Products Division, Dept. I-89-L,
350 Madison Avenue, New York, N. Y.

Please send me without obligation a copy of "Biolac, a New Liquid Modified Milk for Infants."

Name _____

Address _____

City _____ State _____

Why is Diarrhea Unlikely when mixed sugars Modify milk?

INFANT FEEDING PRACTICE POINTERS

Answers to Physicians' Questions

1. Q. What sugars have laxative properties?
A. *Karo is less laxative than simple sugars and dextrin considerably less than maltose.*
2. Q. How does Karo affect the stool?
A. *Karo imparts a brown color, softens and acidifies the stool.*
3. Q. What is the average limit of tolerance for Karo?
A. *Milk mixtures containing as much as 17% Karo produce no untoward symptoms.*
4. Q. What are the relative rates of absorption of sugars?
A. *Dextrose is absorbed most rapidly, lactose most slowly and Karo at intermediate rates of speed.*
5. Q. Is Karo free from organisms?
A. *Yes, Karo is heated to 165° F. and then poured into pre-heated cans and vapor vacuum-sealed.*

Intestinal fermentation is kept at a low level when Karo is fed. The dextrose and maltose components are quickly absorbed and the difficultly fermentable dextrin is gradually and completely transformed into the simple monosaccharides. Karo Syrup thus prevents the flooding of the intestinal tract with excessive amounts of easily fermentable sugars.

And the osmotic pressure of the Karo components is considerably less than that of the sugars resulting from their hydrolysis. There is, therefore, little tendency for water to be drawn into the intestines and be lost in the stool when relatively large amounts of Karo are fed.

*"Infants Thrive
ON
Karo Formulas"*



Infant feeding practice is primarily the concern of the physician; therefore, Karo for infant feeding is advertised to the Medical Profession exclusively. For further information, write Corn Products Sales Company, Dept. I-8, 17 Battery Place, New York City, N. Y.



Confidence . . .

BELIEF IN TRUSTWORTHINESS

Confidence in Lilly products has grown out of an unbroken record of ethical dealing with the medical profession and an understanding of the Lilly policy of supplying only pharmaceutical preparations of highest quality and of unvarying potency.

BILRON (Iron Bile Salts, Lilly)

Aside from being of physiological importance in the digestion of fats, bile salts are necessary in the absorptive processes of the intestine. 'Bilron' has been shown to accelerate the absorption of vitamin K which, in turn, is now recognized to play a prominent role in the mechanism of blood clotting.

Pulvules 'Bilron' (Iron Bile Salts, Lilly) are supplied in 5-grain pulvules (filled capsules) in bottles of 40 and 500.

ELI LILLY AND COMPANY
INDIANAPOLIS, INDIANA, U. S. A.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 76

OAK PARK, ILL., AUGUST, 1939

No. 2

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

Editorials

GENERAL OFFICERS, 1939-1940

PRESIDENT.....JAMES H. HUTTON, Chicago
PRESIDENT-ELECT.....J. S. TEMPLETON, Pinckneyville
1ST VICE-PRESIDENT.....J. S. LUNDHOLM, Rockford
2ND VICE-PRESIDENT.....F. H. MULLER, Chicago
SECRETARY.....HAROLD M. CAMP, Monmouth
TREASURER.....A. J. MARKLEY, Belvidere

THE COUNCIL

E. H. Weld.....1st District, Rockford 1941
E. C. Cook.....2nd District, Mendota 1941
J. S. Nagel.....3rd District, Chicago 1940
L. E. Day.....3rd District, Chicago 1942
Percy E. Hopkins...3rd District, Chicago 1941
E. P. Coleman.....4th District, Canton 1940
Ralph P. Peairs....5th District, Normal 1940
T. B. Knox.....6th District, Quincy 1942
I. H. Neece.....7th District, Decatur 1940
C. E. Wilkinson...8th District, Danville 1940
Andy Hall.....9th District, Mt. Vernon...1942
Henry G. Horstman.10th District, Murphysboro ..1942
Edw. S. Hamilton..11th District, Kankakee 1941
S. E. Munson.....At Large, Chicago 1942
Rolland L. Green...At Large, Peoria 1940
Rollo K. Packard...At Large, Chicago 1941
Chairman of the Council.....L. E. Day, Chicago

EDITOR

CHARLES J. WHALEN.....25 E. Washington St., Chicago

GENERAL COUNSEL

EDWIN W. RAWLINS.....77 West Washington St., Chicago

LEGISLATIVE COMMITTEE

JOHN R. NEAL, *Chairman*.....Springfield

MEDICO-LEGAL COMMITTEE

J. R. BALLINGER, *Chairman*.....2724 W. North Ave., Chicago
R. O. HAWTHORNE, *Secretary*.....Kankakee

EDUCATION COMMITTEE

R. R. FERGUSON, *Chairman*...4013 N. Milwaukee Ave., Chicago
MISS JEAN McARTHUR, *Secretary*.30 N. Michigan Ave., Chicago

PERMANENT HISTORIAN

IRVING S. CUTTER.....301 East Chicago Ave., Chicago

SCIENTIFIC SERVICE COMMITTEE

ROBERT S. BERGHOFF, *Chairman*..30 N. Michigan Ave., Chicago
HAROLD M. CAMP, *Secretary*.....Monmouth

PUBLICATION COMMITTEE

HARRY J. STEWART, *Secretary*.....715 Lake St., Oak Park

Outside of editorial or allied views or statements that are the authoritative actions of the Illinois State Medical Society, the organization denies responsibility for opinions and statements published in the ILLINOIS MEDICAL JOURNAL. Views expressed by the various authors and views set forth in various departments in the JOURNAL represent the views of the writers.

State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original article, advertising copy, cuts and all communications relating to advertising to ILLINOIS MEDICAL JOURNAL, 30 N. Michigan Avenue, Chicago.

Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is \$3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. \$4.00 per year for all foreign countries included in the postal union. Canada, \$3.50. Single current copies, 50 cents.

LENGTHY PAPERS NOT DESIRABLE

At a meeting of the Secretaries Conference, Illinois State Medical Society, a few years ago, Dr. Olin West, Secretary of the A.M.A., in discussing a paper dealing with the problems of publishing a medical journal said: "I recently heard of an incident in which a physician had written what was, in his opinion, a very splendid scientific paper, and sent it to the editor of a certain journal. The editor sent it back with a letter saying that while it contained some very excellent material, it was much too long, much too involved, and would not be read in its present form, and asked the writer to cut it down. He received in answer an insulting letter to the effect that the writer knew what he wanted to say and how to say it. Of course, he did not get very far with that. The editor told him, however, that he was going to take the liberty of having the paper revised and would then submit it to him. He turned it over to a manuscript editor who reduced it by about half and it was then returned to the physician without any comment or any marks of identification. A telegram came back saying that this was the best paper on the subject the gentleman had ever read, adding, "You can throw mine in the waste basket." It was his own paper, properly edited, with some of his idiosyncrasies eliminated. The paper was published in its revised form and created a good deal of favorable comment.

The trials and tribulations of an editor, or any officer of any medical society, are great, as you all know.

SWEEPING VICTORY FOR AMERICAN MEDICAL ASSOCIATION OFFICIALS, FOUR MEDICAL BODIES AND TWENTY-ONE INDIVIDUAL DOCTORS

Organized medicine won a sweeping victory in the Washington, D. C., District Court, July 26, when Justice James M. Proctor sustained the physicians' demurrers to an indictment charging four medical bodies and 21 individual

doctors with violation of the Sherman Anti-Trust Act.

The court cleared the doctors in the trust case and held that the profession is not a trade.

The decision of Justice Proctor was the first major victory scored by organized medicine in the long drawn court battle in which the government charged that certain physicians and their organization were guilty of "restraint of trade" against group health association, its members, Washington hospitals and the Harris County Medical Society of Texas.

As we go to press with the August issue, an official copy of the decision was not available. However, by prompt action and strenuous effort we utilized available facilities and procured a copy of *The Evening Star*, Washington, D. C., newspaper, Wednesday, July 26. *The Evening Star* prints the decision of Justice Proctor in full.

The importance of Justice Proctor's decision is far-reaching. The positive reasoning of the Justice should have a pronounced stabilizing influence upon the wavering, weak-kneed small minority within the profession who have been manifesting a defeatist attitude from the very inception of the controversy.

In our effort to aid in giving the decision the widest possible publicity at the earliest opportunity, we are quoting freely from *The Evening Star*.

"Characterizing as a question of first importance" whether medical practice is a trade within the meaning of Section 3 of the Sherman Act, Justice Proctor flatly declared: "In my opinion it is not."

Upon this contention the Government had based one of its principal charges.

The decision, 12 pages long, went into the case comprehensively.

One point on which Justice Proctor disagreed with the counsel for the physicians was on the constitutionality of the Sherman Act.

Explaining that doctors had argued the statute was "too vague and uncertain to fix a definite standard of guilt, or inform one accused of violating it of the nature and cause of the accusation," Justice Proctor declared:

"I do not agree with the argument. If I did, the circumstances would not justify me declaring the statute invalid, for that would be unnecessary, hence inappropriate in view of my

holding that the indictment is bad on other grounds."

The defendants in the case were the American Medical Association, The Medical Society of the District of Columbia, The Washington Academy of Surgery and the Harris County Medical Society of Houston, Texas.

The 21 individual doctors include the highest officials of the American Medical Association and several leaders of the Medical Society of the District of Columbia. They are:

From the American Medical Association—Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*; Dr. Olin West, secretary and general manager; Dr. William Creighton Woodward, director of the Bureau of Legal Medicine and Legislation; Dr. William Dick Cutter, secretary of the Council on Medical Education and Hospitals, and Dr. Roscoe Genung Leland, director of the Bureau of Medical Economics.

From the Medical Society of the District of Columbia, these officers and former officers: Dr. Arthur Carlisle Christie, Dr. Coursen Baxter Conklin, Dr. James Bayard Gregg Custis, Dr. Thomas Allen Groover, Dr. Robert Arthur Hooe, Dr. Leon Alphonse Martel, Dr. Thomas Ernest Mattingly, Dr. Francis Xavier McGovern, Dr. Thomas Edwin Neill, Dr. Edward Hiram Reede, Dr. William Mercer Sprigg, Dr. William Joseph Stanton, Dr. John Ogle Warfield, Jr.; Dr. Prentiss Willson, Dr. Wallace Mason Yater and Dr. Joseph Rogers Young.

Justice Proctor sharply criticized certain features of the indictment handed down by an additional Federal grand jury just before Christmas. He declared the indictment "smacks" of a "highly colored, argumentative discourse."

At another point Justice Proctor charged "the indictment is afflicted with vague and uncertain statements." In some instances, he added, material facts are entirely lacking.

In deciding that medical profession was not a trade within meaning of Section 3 of the Sherman Act, Justice Proctor based this on a decision of the United States Supreme Court in the case of the *Atlantic Cleaners & Dyers vs. the United States*.

Going into some length on this issue and quoting from the Supreme Court decision, he said: "Thus we have this recent controlling decision defining the word trade and expressly ex-

cepting the learned professions of which admittedly the practice of medicine is one."

Justice Proctor held that neither Group Health Association, its members, nor the Washington Hospitals were engaged in the kind of trade which involves traffic in goods or buying and selling in commerce and exchange.

The business of the association he contended, was not of a manual or mercantile nature.

TEXT OF MEDICAL OPINION

The full text of the opinion handed down by Justice James M. Proctor in District Court, on the demurrer to the indictment against the American Medical Association and others—in which the Government lost and the doctors won—appears below.

The indictment charges a conspiracy to restrain trade in the District of Columbia in violation of Section 3 of the Sherman Anti-trust Act. The defendants are American Medical Association, a national organization of physicians; two of its subordinate bodies, the Medical Society of the District of Columbia and Harris County Medical Society of Houston, Tex.; also the Washington Academy of Surgery, not fully identified, and 21 individual doctors, all members of the national body, some officers thereof, other members and officers of the Medical Society of the District of Columbia. All defendants have demurred to the indictment. It is very long, and only abbreviated references will be made to such parts as are deemed necessary to this decision.

Group Health Association, Inc. (hereinafter called association), is alleged to be an association of Government employes, engaged "in the business of arranging for the provision of medical care and hospitalization to its members and their dependents on a risk-sharing prepayment basis." Medical care is provided by a staff of salaried practitioners engaged in group practice under a medical director. A clinic is maintained, and limited hospital expenses are defrayed for the members and their dependents.

The defendants are alleged to have conspired (1) to restrain the association in its business of arranging for the provision of medical care and hospitalization to its members and their dependents, (2) to restrain such members in obtaining by co-operative efforts, adequate medical care for themselves and their dependents from doctors engaged in group medical practice, (3) to restrain doctors serving on the medical staff of the association in pursuit of their callings, (4) to restrain other doctors in the District of Columbia, including some of the individual defendants, in pursuit of their callings and (5) to restrain Washington hospitals in the operation of their businesses.

The demurrers raise basic objections to the indictment. Of first importance is the contention that none of the alleged restraints has reference to a trade; that Section 3 comprehends only those occupations in commercial life carried on in the marts of trade activity; therefore, that the medical profession and the business of the association and hospitals do not constitute "trade" within the purview of the statute. Against this conten-

tion, the Government's position is that all who are occupied in any activity whereby they supply money's worth for full money payment are engaged in trade; that Section 3 does cover all such activities; therefore that the practice of medicine and the businesses of the association and hospitals do fall within the scope of the statute.

Is medical practice a trade within the meaning of section 3 of the Sherman Act? In my opinion it is not. I think the matter is settled by the Supreme Court in the case of *Atlantic Cleaners & Dyers vs. United States*, 286 U. S. 427. That case squarely presented the question whether "trade" is used in a narrow sense, as importing "only traffic in the buying, selling or exchanging of commodities," or in a broader sense. It fairly called for a definition of the word. This the court undertook to give. In so doing, it declared that the word "trade" was used in Section 3 of the Sherman Act in the general sense attributed to it by Justice Story in the case of the *Schooner Nymph*, 1 Summ. 516; 18 Fed. Cases 506, No. 10,388. The court, intending to give a full and broad meaning, adapted for its own definition for "trade" the language of Justice Story in that early case, quoting therefrom as follows:

The argument for the claimant insists that "trade" is here used in its most restrictive sense and as equivalent to traffic in goods, or buying or selling in commerce or exchange. But I am clearly of opinion, that such is not the true sense of the word, as used in the 32d section. In the first place, the word "trade" is often and, indeed, generally used in a broader sense as equivalent to occupation, employment or business whether manual or mercantile. Whenever any occupation, employment or business is carried on for the purpose of profit, or gain, or a livelihood, not in the liberal arts or in the learned professions, it is constantly called a trade. Thus, we constantly speak of the art, mystery or trade of a housewright, a shipwright, a tailor, a blacksmith and a shoemaker, though some of these may be and sometimes are, carried on without buying or selling goods.

PROFESSION EXPRESSLY EXCEPTED

Thus we have this recent controlling decision defining the word trade and expressly excepting the learned professions of which admittedly the practice of medicine is one. The decision is in harmony with others rendered before and after the *Cleaners and Dyers* case. See *Fed. Trade Comm. vs. Raladam*, 283 U. S. 643; *Graves vs. Minnesota*, 273 U. S. 400 and *Senler vs. Board*, 294 U. S. 608. The restraint alleged against the doctors in specifications three and four of the charge are clearly not within the purview of the statute. I cannot accept the refinements of thought whereby it is argued by the Government that the Court in quoting Justice Story was not defining "trade," but merely illustrating the narrow and broad concepts of the word. Nor does the decision lend any support to the idea that by enacting Section 3 Congress intended to exercise all its plenary power over the District of Columbia to prohibit restraints against all business activities of the citizen. The Court has simply said that Congress meant to deal effectively with the evils resulting from

contracts, combinations and conspiracies in restraint of trade—not all restraints upon every business pursuit, but only those affecting trade.

Doubtless, in the fullness of its power over the District, Congress could have prohibited restraints upon all occupations of the citizen. But there is nothing in the history of the legislation to suggest the need for such a broad reach of power and clearly it was not intended.

The Government has cited many English and American cases dealing with restrictive covenants ancillary to agreements by doctors concerning the sale or conduct of their practice, in which the courts have applied the common law doctrine as to "contracts in restraint of trade." It is argued that these cases have, in a legal sense, drawn medical practice within the orbit of trade, giving to the word a common law meaning to include the professions. From this, it is further argued that at common law restraints upon the practice of medicine were "restraints of trade" and that Congress in the Sherman Act used the term in such a sense. But those cases are beside the point.

They do not involve any question as to whether medicine is a trade. They accepted the universal understanding of it as a profession. Nor do they define "trade." They merely apply a rule of law. At most, such cases serve only to illustrate the development of a legal doctrine, having its origin in contracts concerning tradesmen, which became known as the doctrine "against restraint of trade," and which in course of time was extended and applied to agreements by doctors respecting their professional practice.

MUST FIND STATUTE SANCTION

The case of *Pratt vs. Medical Association*, 1 K. B. 244, upon which the prosecution places much reliance, is interesting in the similarity of facts there proven and here alleged; yet the legal aspects differ greatly. The suit was a civil action in tort by the plaintiff doctors to recover damages for malicious injury to their means of livelihood. The claim was ground upon common-law principles which hold every man liable in damages for wrongful injury to another's means of livelihood.

Combination was not the gist of the action; that circumstance only increased the damage. So here, if the livelihood of group practitioners has been injured by the wrongful acts of the defendants, they too have redress in a civil court. But the charge in the present case is criminal, and to stand must find its sanction solely in the statute.

Coming now to other specifications of the charge, one, two and five. Is the association, or are its members or the hospitals, engaged in trade within the meaning of Section 3 of the statute? The association is alleged to be a non-profit co-operative association of Government employes engaged in the business of arranging for the provision of medical care and the hospitalization to its members and their dependents.

The plan and purpose, it is charged, was to hinder and obstruct the association procuring and retaining on its staff qualified doctors; to hinder and obstruct its doctors from the privilege of consulting with others and

using the facilities of Washington hospitals, and to hinder and obstruct the association in obtaining access to hospital facilities for its members and its doctors from treating and operating upon their patients in hospitals. The foregoing references to Washington hospitals in the plan set forth forms the only support for the fifth specification, charging a purpose to restrain the business of operating said hospitals.

ADOPTED STORY DECISION

In previous discussion of the cleaners and dyers' case, I have expressed the view that the court is giving to the word "trade" its full meaning adopted the definition of Justice Story as its own. That definition covers both the narrow and the broad understanding of the term. Its most restricted sense comprehended "traffic in goods or buying and selling in commerce and exchange." Manifestly, neither the association, its members nor the hospitals are engaged in that sort of trade.

Nor do they, in my opinion, come within the broader class of manual or mercantile pursuits carried on for profit or gain without buying or selling goods. The business of the association was not of a manual or mercantile nature. It was a non-profit co-operative institution whose corporate object was to render service in providing medical and hospital care for its members. The argument for the Government that the business of the cleaners and dyers involved merely the sale of service, and yet was held to be a trade, overlooks the fact that the very essence of that service was the skillful use of labor and material, quite equal to the "art, mystery or trade" of a tailor, blacksmith or shoemaker, mentioned by Justice Story in illustration of manual and mercantile pursuits falling within the category of trade.

Other Federal and State decisions bear out the conception of trade as an occupation or pursuit of a mercantile character. See *Semlar vs. Board*, 294 U. S. 608; *Toxaway Hotel Co. vs. Smathers & Co.*, 216 U. S. 439; *U. S. Hotel Co. vs. Niles*, 134 Federal 235; *Harms vs. Cohen*, 279 Federal 276 (as to musical composers); *People vs. Klaw*, 106 N. Y. S. 341 (as to the theater); *Metropolitan Co. vs. Hammerstein*, 147 N. Y. S. 532 (as to grand opera); *Werth vs. Fire Insurance Companies' Adjustment Bureau, Inc.*, 171 S. E. 255 (as to the insurance business); *Whitcomb vs. Reid*, 31 Miss. 569 (as to dentistry), and *State vs. McClellan*, 31 A. L. R. 527 (as to the laundry business).

POSITION HELD EXTREME

The thesis of Government counsel taken from the opinion in *Brighton College vs. Marriott*, 1 K. B. 312, 316 that "trade" embraces all who habitually supplies "money's worth for money payment" and their contention that the statute should be so broadly construed represents an extreme position which does violence to the common understanding of "trade," rejects authoritative decisions of our courts and ignores cardinal rules of statutory construction.

Their proposition encompasses all gainful work of the citizens. Can it be supposed if Congress had any such drastic intention it would not have made the purpose clear? Certainly it is not for the courts to stretch an old statute to fit new uses for which it was never in-

tended. *United States vs. Gradwell*, 243 U. S. 476, 488. That would be nothing short of "judicial legislation." The charge that members of the association were restrained (specification 2) is devoid of legal substance. Their efforts to obtain medical care is expressed through the medium of the association, a corporate entity distinct from the individual members. Upon no theory can they be treated as engaged in the business of the corporation.

Finally, when the indictment is carefully studied in all its parts, each in relation to the others, it is difficult to escape the conclusion that in its substantial realities the scheme set forth directly centered upon various forms of restraint to be exerted against physicians in rendering treatment and care to their patients, and that all else is incidental to that design. If restraint upon doctors was the only real direct and immediate effect, any indirect effects upon the association or hospitals would not suffice to support the charges as to them. *Standard Oil Co. vs. United States*, 283 U. S. 163, 179; *Nash vs. United States*, 229 U. S. 373.

SUFFICIENCY OBJECTIONS

The defendants have raised objections to the sufficiency of the indictment as a pleading. These go mainly to the claim that many of the allegations dealing with essential and material features of the charge are vague, indefinite and uncertain. The objections are far too numerous to deal with separately. There is merit to many of them. The indictment is afflicted with vague and uncertain statements. In some instances material facts are altogether lacking. An important instance concerns the charge that one purpose of the conspiracy was to restrain the business of the Washington hospitals.

The indictment is barren of any statement of the business methods used by a single hospital in the letting of facilities and service to patients. This is fatal to that particular specification, for without such facts it cannot be known whether loss of patients through operation of the scheme would injuriously affect the economic welfare of any hospital.

Moreover, the particular plan and purpose of the conspiracy as respects the hospitals is only inferentially stated in that part which deals with the plan and purpose of the scheme as against the association and its doctors. Such a method of stating the material part of the charge does not meet the fundamental requirement that a criminal accusation be stated fully, clearly and with directness and certainty. *United States vs. Hess*, 124 U. S. 483; *United States vs. Geore*, 54 A. P. P., D. C. 30; *McMullen vs. United States*, 68 A. P. P., D. C. 302.

INDIVIDUAL CHARGES QUESTIONED

A question also arises as to whether the charge is laid against the individual doctors named in the caption. This is due to the pleader's statement that they "will be referred to hereinafter as the individual defendants," whereas thereafter the charge itself is laid only against "the defendants," who the caption indicates include only the several medical societies. It does seem that as to such simple, yet all-important matters, an indictment

should be so drafted as to exclude any question whatever.

The inducement, as well as the charging part, setting forth the plan and purpose and acts done to effectuate the conspiracy, abound in uncertain statements. Inference, opinion and conjecture are also freely indulged. This is especially so in the inducement, much of which seems unnecessary to a statement of the charge. It is questionable whether some of it would be deemed relevant and competent in proof of the offense. Every indictment should be confined to a clear and dispassionate statement of essential fact. Thus, an accused can better know the exact offense with which he is charged, and will not be confused in making his defense. Ordinarily improper matter in the indictment unnecessary to support the charges will not vitiate the indictment. It will be treated as surplusage and disregarded. But I doubt if such treatment would suffice to relieve these defendants of the prejudice likely to arise by an indictment which smacks so much of a highly colored, augmentative discourse against them. It must be remembered that when a case is finally submitted to a jury for their secret deliberations the indictment goes with them.

ILLEGAL OPERATION CONTENTION

The contention is made that the association is operating illegally in the fields of medicine and insurance; that as its activities are unlawful they do not come under the protection of the statute against restraints of trade. The indictment describes the association as a non-profit, co-operative society, organized under the laws of the District of Columbia, engaged in the business of arranging for the provision of medical care and hospitalization to its members and their dependents on a risk-sharing prepayment basis. This is enough to indicate that it was organized under those sections of the general corporation laws providing for incorporation of societies for benevolent, charitable, educational, literary, musical, scientific or missionary purposes, including societies formed for mutual improvement or promotion of the arts. Thus, the view is strengthened that the association was not engaged in trade, for such corporate functions clearly would not fall under that category. However, I do not think it can be said from the bare allegations of the indictment, taken in their entirety, that the association is engaged in medical practice or insurance. Whether or not that is so could better be decided upon the evidence if in a trial it should be deemed pertinent to inquire into the question.

Finally, section 3 of the Sherman Act upon which the indictment is founded has been attacked by defendants as unconstitutional. It is argued that the statute is too vague and uncertain to fix a definite standard of guilt or inform one accused of violating it of the nature and cause of the accusation. I do not agree with the argument. If I did, the circumstances would not justify me declaring the statute invalid, for that would be unnecessary, hence inappropriate, in view of my holding that the indictment is bad on other grounds.

The several demurrers to the indictment are sustained. Judgment will be entered accordingly.

LAY PAPER COMMENT ON A. M. A. ACQUITTAL

The *Chicago Daily Tribune*, under date of July 28, says editorially under the heading "DOCTORS UPHELD," we quote:

The indictment against the American Medical association, a number of affiliated societies, and twenty-one of their officers and members has been dismissed by United States District Judge James M. Proctor. A spokesman for the attorney general has said that an appeal will be taken.

The defendants had been charged with violating the anti-trust laws. The judge said there could have been no violation because these laws are directed against conspiracies in business or trade, whereas the practice of medicine is a profession and therefore wholly outside the scope of the acts. Further than that, he found the indictments to be "afflicted with vague and uncertain statements," which "smacked of highly colored, argumentative discourse."

The rebuke to the administration and its anti-trust division was as sharp as it was merited. The tables have now been turned. The doctors have been acquitted of any intention to violate any law; the administration has been convicted of a conspiracy to abuse the law and its processes.

The indictments were obtained because the doctors, through their associations, had chosen not to fall in with the New Dealers' notions of the way in which medicine should be practiced. As usual, the administration could not tolerate dissent. There was no law which the attorney general could invoke against the doctors and, accordingly, the anti-trust law was stretched out of shape to cover the alleged crime.

Perhaps it was thought that the medical societies and their members would lack the courage to fight and would accept a so-called consent decree rather than run the risk of fine and imprisonment. If so, the expectation was disappointed. The doctors refused to consider a shotgun decree, they did fight, and they won a victory which may hearten others in similar circumstances to stand on their rights and resist oppression.

POLIOMYELITIS SEASON IS NOW WITH US

The season of poliomyelitis, with its usual ruthlessness and fury, is now upon us.

Reports received by the Public Health Service from the State health officers show 83 cases of

poliomyelitis for the United States for the week ended June 24, 1939, as compared with 65 cases for the preceding week and with an expectancy of 82 cases based on the 5-year median. This total increase was due to the appearance of 1 or 2 additional cases in several scattered States, no one State reporting an increase of more than 3 cases over the preceding week.

From the first of the year to June 24, there have been 713 cases of poliomyelitis reported in the entire United States, as compared with a total of 669 cases for the median weeks of the same period during the preceding 5 years; but deducting the 232 cases which have been reported since the first of the year from South Carolina, where the disease has been unusually prevalent, the total would be only 481—much below the median figure. The present situation, therefore, in the country as a whole, does not appear to justify any apprehension.

Infantile paralysis is sure to be more prevalent in Illinois during the next three months than during the previous seven. The season for the disease lies immediately ahead. An increasing prevalence is all but certain, regardless whether the incidence during the summer and early autumn is comparatively little or great. According to the State Department of Health statistics, the annual number of cases since 1929 has varied from 107 to 779. This history suggests the likelihood of at least 100 cases and possibly 200 or 300 before November.

Weighing the evidence now available, it seems fair to conclude that, in human poliomyelitis, infection enters the body in the great majority of cases not by trauma, not by way of the gastrointestinal tract, but by way of the nasal passages and, specifically, by way of the olfactory nerves—presumably from droplets or dust in which virus is present.

EARLY DIAGNOSIS

Early diagnosis, and particularly the recognition of nonparalytic (abortive) cases, is important if early therapy, isolation, and carrier detection are to be effected. The early toxemia simulates that of other acute infections; hence, justifiable diagnostic errors are common. One may not ignore, or fail to elicit, the finer points in differential diagnosis.

During the stage of invasion, the fever, headache, tender rigid spine which makes it impos-

sible for the child to touch the chin with the knee, generalized muscle pains and tenderness, hyperesthesia and varying degrees of gastro-intestinal disturbance are similar to many infectious diseases. While constipation is usually mentioned, frequently some have observed an early and marked diarrhea.

Poliomyelitis very early shows isolated muscle tenderness, isolated muscle weakness, asymmetry of reflexes, or rapidly changing reflexes. Early, for some unexplained reason, it is common to find an absence of the superficial reflexes, those of the deep tendons being often exaggerated during the irritative, invasion stage. Later, asymmetry or absence of the deep reflexes occurs, if the case progresses. The spine sign, Brudzinski, and Kernig may become present.

The spinal fluid may show no changes at any time, particularly in nonparalytic (abortive) cases, although the abnormally high antiviral titer of the serum of these individuals, as shown by Howitt and Jensen, furnishes the needed final proof of their infection with poliomyelitic virus.

Differential diagnosis at times must include practically all acute infections, particularly those of the respiratory or gastro-intestinal tracts showing toxemia.

TREATMENT

Nasal sprays are still experimental and seem to offer little more than doubtful, transient protection: they endanger the olfactory nerve, and may destroy it at times.

SPECIFIC THERAPY

There is not much to be said about Specific Therapy, which is highly controversial and mostly experimental in nature. This most controversial subject involves the use of convalescent serum, and immune or hyperimmune serum for early treatment, no doubt, this is the most promising method which has not been proved valueless by all the evidence against it so far submitted.

We are inclined to agree with the statement Dr. Kolmer made in 1938 at the annual convention of the American College of Physicians, that injections of High Titer Convalescent Serum is probably the best form of treatment that we possess at present.

After the diagnosis has been made the fol-

lowing are standard recommendations that should be strictly adhered to:

1. Complete rest in bed.
2. Immediate support of the paralyzed muscles by proper splints or braces.
3. That the patient be kept warm.
4. That electrical stimulation be avoided.
5. That massage be avoided.
6. That all unnecessary movements of the limbs and body be avoided.
7. That the patient be not allowed to sit or stand.
8. That parents remain calm in the present situation, since paralysis in practically all patients improves very definitely under proper treatment.

9. That all patients whose after-care is carried on in their homes, have when the proper time arrives, the services of a qualified physical therapist who will work under the direction of a doctor.

In summarizing we quote Bower-Meals in their conclusions when they say that evidence is presented to show that:

1. Carriers of poliomyelitic virus definitely exist, and are important factors in the dissemination and control of poliomyelitis.

2. Sera from *recent, rapidly convalescent and non-paralytic patients* show high antiviral titers: these individuals are most prolific sources of carriers.

3. Human vectors harbor the virus in their intestinal and respiratory tracts.

4. Identification of virus, and hence detection of carriers, is by means of time-consuming, expensive and difficult biological tests, and is uncertain at present.

5. Proof of noninfectiousness ultimately must be the criterion for release from quarantine.

6. Studies in pathology show that (a) poliomyelitis is a systemic disease primarily, and a central nervous system disease secondarily; (b) the systemic phase usually precedes or accompanies the central nervous system phase, which may be absent altogether; (c) the nervous lesions are diffuse below the midbrain, in spite of apparent clinical localizations; (d) the degree of pathologic change in the central nervous system does not parallel the clinical picture; (e) the meningeal involvement is only commensurate with the degree of systemic infection, and may

be absent entirely; (f) cellular changes in the spinal fluid are proportional to the degree of meningitis present; and (g) the spinal fluid cell count may remain entirely normal and unchanged.

7. Diagnosis in many instances does not depend on spinal fluid corroboration.

8. Recognition of the nonparalytic case is possible and most desirable, as this individual is a latent source of potential infection.

9. Present prophylactic vaccines offer encouragement, but no convincing proof of immunity, and Kolmer admits the morbidity is greater in the vaccinated group than in the unvaccinated population.

10. Immunotransfusion is recommended early in severe cases.

11. Convalescent serum by all routes has proved beneficial in our experience.

12. Hypertonic dextrose in normal saline intravenously has proved advantageous in the systemic phase of the disease, and Retan believes the hypotonic solution saves lives in the paralytic group when given by his method.

FACTORS CAUSING ESSENTIAL HYPERTENSION

Essential hypertension is known by other names by scientific writers. Some of these other names are primary hypertension, presclerosis, angiosclerosis, benign essential hypertension, arterial and vascular hypertension, and hyperpie-sis. The term essential hypertension was bestowed because there does not appear to be any primary etiological factor producing this increased blood pressure. The majority of those engaged in this particular field of research regard this as a condition that is unaccompanied by nephritis, aortic insufficiency, hyperthyroidism or any other disease associated with a rise in blood pressure.

Numerous workers in this field of medicine assert that here is the most common type of hypertension and, the most important.

There is such close interrelation between functions of the heart, kidneys and blood vessels, that a premature breakdown of these organs may cause complications to appear and to continue in the others. By virtue of this intimate relationship one or more of the so-called "degenerative diseases" such as heart disease, cerebral hemorrhage,

coronary heart disease, arteriosclerosis and chronic nephritis may coexist in the same person. About one-third of the total number of deaths occurring annually in the United States are caused by these pathological conditions and are classed as cardiovascular-renal diseases. Almost half the deaths reported after the age of 45 are due to such causes. Many fatalities in this group appear to be associated mainly with physiological and pathological processes of aging. Thickening and hardening of the arteries interferes with normal circulation of the blood, and nutrition of vital organs is diminished. As a result of this diminished blood supply and sclerosis the heart muscle may be damaged, atrophy of the kidneys may follow, or arteries may rupture in the cerebrum. Inasmuch as cardiovascular-renal diseases and essential hypertension usually develop over a considerable period of time, *the importance of accepting essential hypertension as a frequent contributory factor is apparent.*

Cardiac and arterial damage are the two principal pathological changes usually considered in a study of essential hypertension, or as sometimes it is designated "genuine hypertension."

A study of the accepted literature on the subject reveals that although many factors are discussed in the etiology, *no one factor appears to be responsible for its existence in all cases.* Described as *unknown etiology*, and often beginning in the second and third decades of life, it appears to follow a chain of environmental influences, more or less harmful or pernicious, that cover the entire life of the individual affected.

Essential hypertension varies a great deal in its early stages. Some cases pursue a rapid course. In other cases it may continue for years before manifesting an aspect of seriousness. Its definite approach is heralded frequently by headache and dizziness that may mean a terminal thrombosis or cerebral hemorrhage.

*A large number of these patients have been found with a normal pressure after rest and sleep, and in a number of cases it has dropped to normal without rest or the aid of medicine.*¹ As a rule persons are said to have essential hypertension when arterial hypertension is above normal or when there is a persistent and increasing elevation of both systolic and diastolic blood pressure. The chief symptom is a permanent

1. Gunewardene, H. O.: Essential Hypertension, Brit. Med. J., 2, 1114, 1933.

systolic blood pressure of 145 mm. of mercury or over, and a left ventricular hypertrophy for which a cause cannot be found. When the increase in blood pressure becomes definitely established it is usually followed by such terminal sequelae as cardiac failure, cerebral accidents, or renal insufficiency. Perhaps the majority of young persons with hypertension are nervous, irritable, or of a weak constitution. Stress of modern life is too much for them. Fahr² states that about 140,000 people die annually in the United States from essential hypertension, and it is the opinion of some investigators that the mortality incidence is steadily mounting.

That essential hypertension is hereditary and social, and that in many instances it exhibits strong familial tendencies appears to be too well known to need elaboration. This has been accepted by most of those who study heart disease. A large percentage of patients with this type of blood pressure give a history of the disease in parents, brothers, sisters, and other relatives. Some believe that it is a constitutional disease, and that when both parents have it there is strong probability that it will be transmitted to the children. Many reports call attention to the fact that several members of the same family had hypertensive disease, or that both parents died of heart disease, apoplexy or dropsy. Numerous research specialists have observed that there is a tendency to hypertension in diabetics. They point, also, the close similarity between diabetes and essential hypertension when etiological factors are being sought. Another factor mentioned by some as having an influence on essential hypertension is endocrine imbalance. Moderate hypertension is frequently observed in hyperthyroidism. Some think that the systolic pressure in this affection is the result of vasomotor instability. Many women have hypertension during the menopause, but in numerous instances it is difficult to determine whether it is a true essential hypertension or a transient blood pressure that frequently occurs at this time. Positive conclusions should not be drawn until a more thorough study is made.

Arteriosclerosis in the medulla is considered another factor of etiologic importance, but it is possible that hypertension may have preceded it if the primary cause of the arteriosclerosis can-

not be determined. Marked irritability of the nervous system is generally accepted as an etiological factor in both old and young patients who are afflicted with essential hypertension. As a rule these patients are of a nervous temperament, and when emotional strain is continuous hypertension remains as a permanent part of the picture. There appears to be a large variety of underlying or precipitating factors in this type of patients. It has been suggested that vascular changes in the kidneys is one cause of essential hypertension, but in some cases it is debatable whether arteriosclerosis causes hypertension or whether hypertension produces the vascular changes in the kidneys.

Despite the fact that infection usually lowers blood pressure, it is placed in the first ranks as a causative factor by many who have made a critical study of this subject. Some think that it may have more or less influence on other factors in hypertension, and that it should be accepted as a cause of hypertension.

Hyperirritability of the vasomotor nervous system,—the result of endocrine dysfunction,—together with an inherited predisposition appear to be of the greatest importance in the pathogenesis of essential hypertension. It has been fairly well established that emotional responses produce a hypersecretion of vasopressor substances from the thyroid, pituitary and suprarenals which may stimulate vasoconstriction. Such patients are emotionally unstable and their vasomotor mechanism seldom responds in a normal manner. When patients of a nervous temperament are asked to practice calmness and avoid anxiety, outbursts of anger, worries, and an unpleasant home life because it is obvious that these are important factors in producing essential hypertension. When rest and relaxation, plenty of sleep, and a moderate amount of exercise reduce blood pressure and add to the patient's feeling of well-being, as exhibited by both subjective and objective improvement, it can readily be seen that the omission of such methods of treatment are factors that must be carefully analyzed together with other things included in the patient's life and habits. Many sufferers from hypertension show an immediate excellent response to such therapy, and in numerous instances there is a dramatic abatement of symptoms.

2. Fahr, G.: Hypertension Heart, *Am. J. M. Sc.*, 165: 454, 1928.

The seriousness of this type of hypertensive disease is more real and apparent when one considers that it continues throughout a lifetime. Some die within a few years, while others afflicted for many years appear to *enjoy good health*. As a rule such favorable results are observed in those patients who recognize the ill effects produced by a sedentary existence, and who make careful adjustments in their manner of living, and exercise moderately.

Many succeed in cultivating habits that usually go hand in hand with health, and they overhaul many viewpoints that have consistently led them away from it. Such persons begin to practice imperturbability. They realize finally that many activities in the mad rush of present-day existence have shortened many lives. Years ago, hypertension was a source of discomfort and mental distress for all who were afflicted with the disease. Today both medical men and patients know that many discouragements and disappointments encountered while seeking a successful therapy have been circumvented. Many persons who have hypertension live nowadays for years because of a carefully regimented existence.

HEALTH EXHIBIT AT THE NEW YORK WORLD'S FAIR

In the Medicine and Public Health Building, New York World's Fair, Lederle Laboratories are sponsoring the scientific exhibits on Allergy and on Pneumonia, each exhibit being controlled by a committee of eminent specialists on these diseases. All exhibits in the building are scientific in character, merely carrying on a small plaque the names of the sponsors.

The Pneumonia exhibit, surfaced entirely of white laminated "Beetle," occupies a booth 20x30 feet in a commanding position. It presents, pictorially, the best composite opinion of the medical profession on how a pneumonia case should be treated. The narrative is unfolded by means of a sequence of dioramas, pictures, and charts. The story begins with an "animation" of a man walking in the rain, and takes him through typing and serum therapy and all the various progressive stages of a typical case of pneumonia to a final picture at the serum farm where his little daughter is pictured, saying, "Thanks, old horse, you saved my Daddy's life!" A "Postscript" deals with Sulfapyridine.

The second exhibit, on Allergy, tells, in changing dramatic sequences, three 2 minute dramas of Allergy: "Tommy Todd's Autumn 'Colds,'" "Mrs. Tucker's Wheezes" and "Baby Bing's Eczema."

Physicians visiting the New York Worlds Fair are entitled to exclusive privileges in the Professional Club

in the same building. Admission is obtained by simple identification as a doctor, without charge, and is only available to physicians and their guests. Provision is made here for consultation with exhibit sponsors on technical questions.

PREPARE NEW TYPE SMALLPOX VACCINE

New York.—On the heels of news of smallpox outbreaks in New York and Tennessee comes an announcement to scientists of a new smallpox vaccine which eliminates the severe scars and other inconvenient features of ordinary vaccination.

The new vaccine was developed by Drs. Thomas M. Rivers and R. D. Baird and S. M. Ward of the Hospital of the Rockefeller Institute for Medical Research here. It is made by growing vaccine virus on a special medium consisting of minced chick embryo tissue and Tyrode's solution. Vaccinations against smallpox ordinarily are made with calf lymph vaccine virus.

Vaccination with the new vaccine virus should be followed, within six months to one year, by revaccination with calf lymph virus, the Rockefeller scientists advise in their report to the *Journal of Experimental Medicine*.

"In this way," they state, "vaccinated individuals will not become sick and will not be subjected to the dangers associated with primary vaccination with calf lymph virus, but will obtain a solid and lasting immunity to smallpox."

No scar forms after the primary vaccination with the new vaccine virus, it is reported, if the inoculation is properly made. Nor is there any fever and discomfort. Following revaccination later with calf lymph virus, very few of the children had fever or other symptoms, and what scars occurred were only "small superficial" ones.

"IF THIS BE TREASON—"

Is the American Medical Association a trust? Yes it is—a sacred "trust." From its very beginning the A. M. A. has considered the health of the American people above all else. It led the fight against diploma mills, and through its efforts medical education was placed on its present high plane. The A. M. A. was instrumental in raising the standards of hospitals so that today American hospitals are the finest in the world. It has striven continuously to give the American people the best quality of medical care that the people of any great nation enjoy. But, because it does not fall in line with all the schemes proposed for the distribution of medical care the A. M. A. must now be purged.

We say, in the words of Patrick Henry, "If this be treason, make the most of it!"—Milwaukee Medical Times.

The errand boy says: "The difference between a hair dresser and a sculptor is that while the hair dresser curls up and dyes, the sculptor makes faces and busts."

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
Ralph Peairs, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois
Address all letters and communications to the Chairman.

R. K. Packard, M. D.
C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

Undoubtedly the most important development in the economic field in the past month was the decision of Judge James M. Proctor, of the Federal District Court of Washington, announced on July 26. In this decision he dismissed the case instituted by the anti-trust division of the Department of Justice against the American Medical Association, as well as some of its officers; charging violation of the antitrust laws of the nation. The Judge stated that the medical profession is not a trade (exactly as contended by the medical profession), but one of the learned professions. It is to be hoped that all of the readers have seen the decision of this Court in its entirety, for it is very definite and should be most encouraging to those of us who have been genuinely concerned about the attitude of the federal government toward the medical profession the past few years. From the time of the first notice of the action by the Department of Justice, last December, it has seemed inconceivable to the laity as well as the medical profession that there could be any possibility of legality in the indictment, and a verdict throwing the entire case out of court was freely predicted. In spite of all such predictions, the possibility of being obliged to stand trial was constantly in the background and the decision of this court has removed this danger, even though there is a threatened action to appeal from his decision by the Department of Justice. The past month, practically every medical journal coming to the attention of the writer has commented on this suit. Some of the writers have been venomous in their articles while others have contained themselves and written in a conservative vein. The article in the *Kansas City Medical Journal* was the most caustic and at the same time entertaining. There remains the question of how much good such articles accomplish, although certainly they afford the writer much pleasure and really show the true attitude of a large number of the profession.

The fate of the National Health Bill of Sen-

ator Wagner, officially known as S.B. 1620 appears sealed for this session of Congress with the members of Congress eager to get home and apparently out of hand as their attitude on the Neutrality and spending bills have shown. It will require all of the political acumen of the leaders, aided by considerable prodding and possibly the laying on of the whip to put over the remaining "must" legislation to get around to S.B. 1620, as much as the Senator from New York desires action.

With the return of Senators and Representatives to their homes, another and possibly the final opportunity is given us to call on them and let them know definitely it is the desires of the medical profession that this bill be defeated. Surely half a day spent in contacting your representatives in Congress is not too much to give to preserve the future of the practice of medicine as an individual business, run by the medical profession.

The July issue of *Medical Economics* contains several good articles on the hearings at Washington in regard to the Wagner Bill. It analyses the testimony of several of the physicians who presented the views of the medical profession and if the report is authentic, some of our representatives were not as well prepared and informed as we, the rank and file, had expected them to be. This is most unfortunate, for it gives a bad impression to the public to have our self selected representatives admit they are not fully conversant with the bill under discussion. Also there is an interesting article on the personnel of the sub-committee conducting the hearings on the bill. Read it again so you can know a little more of the inside workings of the hearing.

We also suggest that you read the issue of July 1, 1939 of the *Illinois Health Messenger*, particularly the first article. Coming from the pen of the Director, who is a good member of the Illinois State Medical Society and a loyal friend of organized medicine, one must be struck

by the somewhat biased view he takes as to what is needed at present in Illinois to improve medical care.

The report that the doctors of North Dakota had their fill of the socialized medical plan of the Farm Security Administration in that state was most illuminating. From the beginning, most medical men agreed that the amount apportioned annually for each family would be most inadequate in furnishing satisfactory medical care to those on the rolls. It has developed that neither the clients or the medical profession are satisfied and the first report was that the entire plan would be dropped but later reports are to the effect that the Administration has raised the pay and is most desirous of continuing the experiment. If the experiment must continue, it is to be hoped that the medical profession will insist that the fee be high enough to remove the medical profession from the ranks of the insurance carrier. Thank goodness, this plan has never been OKed by the medical profession of the state of Illinois.

Lay magazines continue to contain many articles on Health Insurance. While many of them are supposed to be impartial, they all seem to be either better informed on the affirmative side or are already sold on that side. *Good Housekeeping Magazine* for August, 1939, contains "Compulsory Health Insurance—Loosely Called Socialized Medicine." Read it over if you have not already done so and see whether you agree with her and then write to the Editor of the magazine and let him know your opinion. Also there has been a series of five articles by Ex-Secretary Moley on the Brain Trust in *Saturday Evening Post*. Also read them, for they are most illuminating as well as interesting.

The Summer Issue of *America's Future* continues to fight the battles of the medical profession by presenting an article by Henry Rolf Brown on Group Health as it is run in Washington by the government in comparison with Wisconsin, where the medical profession is in control. It makes most interesting reading and shows how much more scientific and effective the methods employed in Wisconsin are over those in Washington.

We hope that the special sub-committee now studying the problem of insurance plans for the low income groups in Illinois will be able to report some progress at a proposed meeting of the

same to be held early next month. If any member of the Illinois State Medical Society receives a request for assistance or information from any member, we trust that the same will be promptly furnished.

E. S. Hamilton, M.D.,

Chairman of Committee on Medical Economics.

Correspondence

REFRESHER COURSES

Because of the progress that has been made in the past two years in educating the public and the presentation of refresher courses for physicians, the Council of the Illinois State Medical Society has seen fit to continue the work and has again appointed the present Committee. The lone exception is Dr. H. G. Horstman who has been elevated to the Council by members of his district and Dr. Lange has been appointed in his place.

Progress has been made in making the public and physicians more obstetrical and pediatric minded. This is easily shown by the reduction in the infant and maternal mortality rates. These rates serve as an index to the success of good obstetrical and pediatric care.

The refresher courses presented at the University of Illinois Medical School have been well received and the enrollment to date this year is greater than last. The courses have been arranged so as to meet the common problems of the general practitioner.

In many counties there has been some hesitancy of the local chairmen in promoting and fostering the platform presented. However, when shown the excellent progress in the majority of problems the local medical societies will undoubtedly urge more activity.

A new county platform is being drafted and will be presented to each county medical society in the near future. It is the plan of the Maternal Welfare Committee of the Illinois State Medical Society to ask each county society to include in the early program arrangements one meeting to explain and acquaint the members with the aims of organized medicine in taking initiative in this state and attempting to improve obstetrical and pediatric service.

T. B. Williamson, M. D.,

Chairman.

John F. Carey, M. D.,

Secretary.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, January 6, 1940, at 2:00 P. M. *The Board announces that it will hold only one Group B, Part I, examination this year prior to the final general examination, instead of two as in former years.* Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held in June 1940.

Applications for admission to Group B, Part I, examinations must be on file in the Secretary's office not later than October 4, 1939.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 8, 9, 10, and 11, 1940 immediately prior to the annual meeting of the American Medical Association in New York City.

Applications for admission to Group A, Part II examinations must be on file in the Secretary's office not later than March 15, 1940.

After January 1, 1942, there will be only one classification of candidates, and all will be required to take the Part I examinations (written paper and case records) and the Part II examinations (pathological and oral).

At the annual meeting of the Board, held in St. Louis on May 12, 1939, it was found necessary, on account of increased administrative expenses, to increase the application and examination fees. Effective May 12, 1939, these are as follows: Application fee \$15.00, payable upon submission of application for review by Board; examination fee \$85.00, payable upon notification to candidate of acceptance of the application and assignment to examination. Neither fee is returnable. This increase does not apply to candidates whose applications were filed prior to May 12, 1939.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

Yours very truly,
Paul Titus, Secretary.

ATTENTION COUNTY MEDICAL SOCIETY SECRETARIES

Doctor A. W. Schulz who has charge of the admission of Veterans to Hines Hospital, is available to county medical societies to explain the law in regard to the admission of Veterans to the Veterans' Hospital and to interpret form No. P. 10 which is the affidavit that all veterans must sign on entrance.

If secretaries desire to have Doctor Schulz take part of a program at one of their regular meetings, he may be secured through the Scientific Service Committee of the Illinois State Medical Society, 30 N. Michigan Avenue, Chicago.

MISSISSIPPI VALLEY MEDICAL SOCIETY MEETING

The fifth annual meeting of the Mississippi Valley Medical Society will be held in the new \$500,000 Municipal Auditorium at Burlington, Iowa, September 27, 28 and 29. There will be 32 clinicians on the program who will give 50 lectures, clinical demonstrations, etc. An All-St. Louis program with 14 clinical teachers from St. Louis University and Washington University will feature the first day. Two short courses of instruction of four hours each will be given in internal medicine and gynecology by Dr. Fred M. Smith, Head of the Dept. of Medicine and Dr. E. D. Plass, Head of the Dept. of Obstetrics and Gynecology, University of Iowa. Among the speakers will be Dr. Rock Sleyster, President of the American Medical Association, Dr. Evarts A. Graham and Dr. V. P. Blair, Professors of Surgery, Washington University. Dr. W. T. Coughlin, Prof. of Surgery, and Dr. Charles H. Neilson, Prof. of Medicine, St. Louis University, Dr. Frederick F. Boyce, Ass't. Professor of Surgery, Louisiana University, Dr. Arthur E. Hertzler, Prof. of Surgery, University of Kansas, Dr. Karl Goldhamer, formerly Roentgenologist, University of Vienna. There will be a big technical and scientific exhibit hall. A complimentary Stag Supper will be given on September 27 and banquet September 28. Every ethical physician is cordially invited to attend. Detailed program may be secured from Harold Swanberg, M. D., Secretary M.V.M.S., 209-224 W.C.U. Building, Quincy, Illinois.

EDUCATIONAL COMMITTEE

Report for June and July, 1939

RADIO:

Radio programs were continued over stations WAAF, WJJD and WGES. A special radio program was given over the Columbia Broadcasting System on CAMPS AND HEALTH. The material was furnished by the Educational Committee and was dramatized and given by the regular dramatic staff of CBS.

26 programs were given over Chicago stations. Copies of the material were sent to county medical societies throughout the state to be worked over to apply to local conditions and then given by members of the individual societies.

EXHIBITS:

The committee had two very interesting window exhibits in the Marshall Field & Co. Annex, Chicago. One exhibit was devoted to THE FAMILY DOCTOR. The three prize winning posters on the family doctor from the Hall of Health were used as the background for the window. A large chart was painted showing the number of doctors belonging to the American Medical Association, the Illinois State Medical Society and the Chicago Medical Society.

The second window was directed to arouse interest in infant welfare. The State Department of Public Health loaned an incubator which was made by the NYA at Harrisburg. Posters from the State Department giving morbidity and mortality rates were used as the background.

Marshall Fields tell the committee that they are very grateful to the Medical Society for supplying these interesting health displays which attract so much attention.

PACKAGE LIBRARIES:

The package library service of the committee is being enlarged and brought up to date in order to furnish the latest and best information to doctors preparing health talks for the laity. A wide range of subjects is offered and special folders will be prepared whenever necessary.

Many men throughout the state find this service helpful and a great time saver.

CONTACT WITH LAY GROUPS:

Conferences have been held with the President and health chairman of the Illinois Congress of Parents and Teachers, the Chairman of Public Health of the Illinois Federation of Woman's Clubs, the Program Chairmen of the Parent Teacher Associations.

Plans are being made to cooperate with the various important lay groups in an effort to bring the story of good health before the public.

The committee has been receiving requests from all sections of the state for doctors to address meetings during the coming season.

MAILING LIST:

952 articles were sent to libraries.

912 articles were sent to hospitals.

5,528 articles were sent to a lay list which includes WPA teachers, Home Advisers, Schools, Red Cross leaders, teachers, health chairmen.

142 Articles were sent to a new list of P.T.A. chairmen.

18 articles were sent to NYA administrators.

160 articles were sent on "What Socialization of Medicine Means to You."

1,050 radio schedules were sent out announcing the July programs.

PRESS SERVICE:

Articles were written and approved on

Care of the Baby's Skin.

Fourth of July Injuries.

Warts.

Eczema in Infants.

Common Sense in Epilepsy.

Bacteria and Infection.

Summer Prevalence of Infantile Paralysis.

Eat to Live, Not Live to Eat.

Any Day May be Dog Day.

Skin and Its Care.

The Mentally Handicapped.

Plastic Surgery Advances.

The School Bell Calls.

An Old Disease.

Epilepsy, A Seizure.

RELEASES TO NEWSPAPERS:

2,020 health articles were released to Illinois newspapers.

37 releases announcing Jefferson - Hamilton meeting.

32 releases announcing Effingham meeting.

45 releases announcing Macoupin County Heart Clinic.

35 releases announcing Carroll County Heart Clinic.

12 releases announcing DeKalb County Meeting.

SPECIAL SERVICE TO COUNTY

MEDICAL SOCIETIES:

110 notices prepared for Jefferson - Hamilton County.

256 notices prepared for Whiteside County.

104 notices prepared for LaSalle County.

200 notices prepared for Bureau County.

69 notices prepared for Effingham County.

74 notices prepared for Macoupin County.

97 notices prepared for Rock Island County Maternal Welfare meeting.

JEAN MCARTHUR, *Secretary*.

SCIENTIFIC SERVICE COMMITTEE

Report for June and July

23 scientific programs were arranged for county societies by the committee as follows:

Pontiac—Dr. A. F. Lash—Management of Prolonged Labor.

St. Clair—Dr. M. H. Streicher—Diseases of the Colon and Rectum.

Fulton—Dr. Tell Nelson—Allergy in General Practice.

Madison—Dr. E. E. Hauser—Derangements of the Knee Joints.

Madison—Dr. Walter R. Fischer—Common Disorders of the Feet.

Madison—Dr. James Graham—Back Ache.

Kewanee—Dr. Henry Irish—Physical Examinations of Children.

Kewanee—Dr. William F. Mengert of Iowa—Management of the Puerperium.

Scott County, Iowa—E. M. K. Geiling—Sulfanilamide.

Scott County, Iowa—Dr. Paul R. Cannon—Sulfanilamide.

Rushville—Dr. Emmet F. Pearson—Food Allergy and Common Food Poisons.

Jackson—Dr. Joseph Greengard—Gastro-Intestinal Diseases from the Standpoint of the Pediatrician.

Jackson—Dr. Charles Newberger—Obstetrics.

McLean—Dr. Leo K. Campbell—Benefits and Dangers of Reducing.

Effingham—Dr. James J. Callahan—Fractures.

DeKalb—Dr. Ralph Reis—Conduct of Prolonged Labor.

Galesburg—Dr. Henry Buxbaum—Hemorrhages.

DeKalb—Dr. Craig D. Butler—Care of the Premature Infant.

Fulton—Dr. Joseph L. Baer—Obstetrics.

Whiteside—Dr. Anders Weigen—Medical Impressions of Norway and Sweden.

Johnson, Massac, Pope — Dr. Gerald Cline — The Allergic Child.

Rock Island—Dr. Arthur F. Abt—Prophylaxis of Diseases in Childhood.

Macoupin—Dr. Robert S. Berghoff—Heart Clinic and talk.

Pike, Calhoun—Dr. William J. Morginson—Fungus Infections of the Feet, Hands and Groin.

Pike, Calhoun—Dr. James J. Graham—Foot Problems.

The committee is pleased to announce that it has made schedules for the following meeting which may be of interest to doctors not on the mailing lists of the individual counties:

August 24—Kewanee—Henry County Medical Society—Evening.

Dr. Chauncey C. Maher—"Cardio Renal Disease."

Dr. Guy Cushing—"Acute, Perforating Gastric and Duodenal Ulcer."

A number of county medical societies have already asked the Scientific Service Committee to secure speakers for meetings this fall and winter. It is much easier for the committee to secure speakers when sufficient notice is given.

The Scientific Service Committee is prepared to assist any county medical society in planning a clinical conference, a symposium, or a "one speaker" type of program.

LEDERLE'S WORLD'S FAIR EXHIBITS

The Pneumonia exhibit presents, pictorially, the best composite opinion of the medical profession on how a pneumonia case should be treated. The narrative is unfolded by means of a sequence of dioramas, pictures,

and charts. The story begins with an "animation" of a man walking in the rain, and takes him through typing and serum therapy and all the various progressive stages of a typical case of pneumonia to a final picture at the serum farm where his little daughter is pictured, saying, "Thanks, old horse, you saved my Daddy's life!" A "Postscript" deals with Sulfapyridine.

The second exhibit, on Allergy, tells, in changing dramatic sequences, three 2-minute dramas of Allergy: *Tommy Todd's Autumn "Colds," Mrs. Tucker's Wheezes, and Baby Bing's Eczema*. By means of an animated question box and dioramas showing typical scenes in the doctor's office, a search for the offending allergic excitant in each of the three stories is conducted through information obtained by questions, scratch tests and an examination of the patient's family tree. An interesting part of the allergy exhibit is an illuminating transparency chart showing in full color, 48 of the most common allergic excitants. A separate series of little pictures invites the visitor to examine commonplace scenes for causes of allergy and then, by pressing buttons, to illuminate the concealed answers.

The whole Medicine and Public Health exhibit, which its sponsors had hoped would prove of interest to the more serious-minded among the laity of Fair visitors, has upset all advance calculations and confounded the experts by "packing 'em in" as fast as any five-star hit. Actual attendance through June 15 was 1,958,909. It would have been larger had human beings been more compressible, because on some days the doors had to be closed during peak hours.

On one day this exhibit actually drew 49 per cent of the total paid Fair attendance, which means that every other visitor to the Exposition saw the talking skeletons, the Carrel-Lindbergh heart apparatus and other features of the exhibit.

Physicians visiting the New York World's Fair are entitled to exclusive privileges in the Professional Club in the same building. Admission is obtained by simple identification as a doctor, without charge, and is only available to physicians and their guests.

AMERICAN CONGRESS OF PHYSICAL THERAPY

The 18th annual scientific and clinical session of the American Congress of Physical Therapy will be held September 5, 6, 7, 8, 1939, at the Hotel Pennsylvania, New York City. Preceding these sessions the Congress will conduct an intensive instruction seminar in physical therapy for physicians and technicians, August 30, 31, September 1 and 2.

Physicians are urged to plan their vacation for these periods and bring their families to New York for the World's Fair. Ample time has been provided for during the convention to visit the fair and to enjoy the various activities of America's metropolis.

While the convention proper will have numerous special program features of scientific interest, the added attraction of the World's Fair should make it extremely worth while for every physician to come to New York and spend a most profitable vacation.

The instruction seminar should prove of unusual interest to physicians and technicians. The clinics which comprise half of the schedule make this course outstanding for its practical value. As in the past outstanding clinicians and teachers will participate. Registration is limited to 100 and is by application only. For information concerning seminar and preliminary program of convention proper, address American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

REPORT VITAMIN E CAN BE PRODUCED

Vitamin E has been identified chemically, made in the laboratory and reduced to a chemical formula.

This culminates 16 years of research on the fertility vitamin. The achievement was announced in three highly technical papers in the journal, *Science*, with some seven American scientists from three institutions participating.

Synthetic vitamin E, a white powder chemically named alpha tocopherol, when fed to sterile female white rats allows them to have normal babies as though they had never been deprived of natural vitamin E such as occurs in many natural foods.

The chemical part of the work is reported by Drs. Lee Irvin Smith, Herbert E. Ungnade and W. W. Prichard of the University of Minnesota School of Chemistry, and Dr. Oliver H. Emerson of Merck and Company Research Laboratories and the Institute of Experimental Biology at the University of California.

SMALLPOX INCREASING

Smallpox was more than usually prevalent during 1938, according to a statement from the United States Public Health Service (*Public Health Reports*, May 5, 1939). The disease showed twice the number of cases of the preceding five year median.

"With the possible exception of Mexico," said the statistical analysis, "the United States has one of the highest case rates of smallpox reported in North America and Europe. The incidence of the disease is unknown in most parts of South America, Africa and Asia in view of the success of other nations in practically stamping it out. The situation prevailing in this country reveals a curious indifference to the existence of a disease which can be readily controlled by well-known methods.

"The disease is relatively rare in all parts of the country except the Great Plains and Pacific Northwestern States. Starting there in 1938, the outbreak spread slowly until many states outside this area reported a higher case rate than usual. The incidence began to decrease during the last half of 1938, but it is still well above the average."

THE AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY

The first American Congress on Obstetrics and Gynecology is to be held in Cleveland the week of September 11-15, 1939. This meeting is to be attended by the various professional groups interested in the

problems of maternal and child care. Physicians, public health workers, nurses, and hospital administrators have been invited to attend and participate in the activities of the Congress.

The success of the Congress is assured by the large advance registration, the comprehensive programs for the various meetings, and the large number of scientific exhibits covering many phases of obstetrics and gynecology. To date over sixteen hundred registrations have been received. It is anticipated that more than five thousand members will attend the meetings.

The Congress will afford the first opportunity to all the professional personnel interested in the problems of obstetrics and gynecology to meet together for a discussion of the various phases of maternal and infant care and to correlate these problems. To this end doctors, nurses, public health workers, and hospital administrators and educational leaders are invited to participate. These separate groups have arranged unusually comprehensive programs in their own special fields and have integrated their problems with those of the other groups.

The general plans of the meetings will provide separate morning sessions for doctors, nurses, and public health workers. Noonday round table discussions will afford an opportunity for more informal consideration of important subjects. The afternoon meetings will bring together all of the members of the Congress in programs of general interest to the entire group. Evening meetings will be of general interest and will be broadcast. Outstanding individuals outside of the field of medicine will present the social implications of the problems of reproduction to the Congress and the radio listeners.

The medical program will include round tables and discussions of obstetric and gynecologic subjects by leading specialists. Monday morning will be devoted to medical and surgical complications of pregnancy. On Tuesday morning gynecological complications will be presented. The problems of labor will occupy Wednesday morning. Endocrinology in obstetrics and gynecology, including the subject of sterility, will be presented Thursday. The last morning will be given over to a discussion of infection in obstetrics and gynecology. A round table discussion will be offered every day on each of the following subjects: the toxemias of pregnancy, genital infections, obstetric and gynecologic hemorrhages, the fetus and the newborn, anesthesia, analgesia and amnesia in labor. These subjects will be repeated daily under the chairmanship of a clinician who has made outstanding contributions on the subject. This will therefore give an opportunity to a maximum number of individuals to attend.

The section on public health will present a similar program. The subjects to be covered in the morning meetings are the following: public health and maternity care, maternal care in the rural areas, federal and state programs in maternal care, maternal care and economics, educations and maternal care. The program for the nurses will be equally as comprehensive. The afternoon meetings of the component groups attending the Congress will correlate all the subjects which have

been considered at the morning meetings of the special groups.

The scientific exhibit which is to be held in conjunction with the Congress will be unusually comprehensive. New developments in obstetrics and gynecology will be presented and illustrated by diagrams, pictures, models, and moving pictures. Although investigations underway in the large teaching centers will predominate in this exhibit, some of the exhibits will have a wider scope in that they will attempt to portray the relationship of the problems of reproduction to the profession and to the general public. A large commercial exhibit is already assured. The leading pharmaceutical houses, the outstanding publishers, the leading manufacturers of special products pertaining to the specialty of obstetrics and gynecology, as well as numerous related exhibits promise an interesting and profitable exhibit section.

The Congress should stimulate the development of state and local programs for better care for mothers and babies. It should likewise direct public attention favorably toward these problems and their successful solution by the profession. Thus, it should prove to be a force for tremendous good in bringing the public and profession together in the best interests of both.

In order to achieve the greatest good the Congress must have a wide representation. The entire medical profession is cordially invited to membership. The general practitioner, in particular, is urged to attend for he will find the meetings will provide him with a week's intensive instruction in all the phases of obstetrics and gynecology. Nurses and hospital administrators should likewise be urged by their medical staffs to attend the meeting, in order that they may participate in the advantages it has to offer.

There is a nominal registration fee of \$5.00 which includes a year's membership in the American Committee on Maternal Welfare. All interested individuals are urged to send in their registrations in the American Congress on Obstetrics and Gynecology to the headquarter's office, the Annex, 650 Rush Street, Chicago, Illinois. Checks should be made payable to Dr. R. W. Holmes, Treasurer. A detailed program of all the meetings and scientific and commercial exhibits will be mailed on request.

BABIES AT HOME OR HOSPITAL

The following from Illinois Health Messenger, August 7, 1938:

The romanticism of birth in a log cabin or its modern equivalent is by no means as obsolete or out-dated as one might suppose. While the great majority of urban babies first see the light of day within hospital doors, the reverse still holds good for the children of rural parents.

The records show that about 4 of each 5 babies of urban dwellers in Illinois are born in hospitals while the birth of scarcely more than 1 in 5 of the rural babies takes place in a hospital. It is easier, perhaps, to provide good delivery and obstetrical care in a well equipped and well managed hospital than in the aver-

age private home but the methods and procedures employed by the physician or other attendant at birth are of far more importance than the place of birth. This is also revealed by the records as well as by such celebrated instances of excellent obstetrical care as was provided in the private home of the Dionne quintuplets.

Last year in Illinois, for example, there were 33,953 births in communities of less than 10,000 people and in the strictly rural areas. Among these, most of whom were not born in hospitals, the loss of life was at the rate of 46.8 per 1,000. In the cities of 10,000 or more (exclusive of Chicago), there were 31,697 births and the rate of loss was 46.6 per 1,000. The advantage in favor of the urban and mostly hospital babies was slight. In Chicago, however, where a special program for the protection of the 49,633 babies born in that city was conducted, the rate of loss was 38.2 per 1,000.

On the other hand, the mothers fared best in the rural areas, which include communities up to 10,000. Deaths of mothers from puerperal causes were at the rate of 2.7 per 1,000 live births in the rural districts, against 4.2 in all municipalities. Exclusive of Chicago the cities had a rate of 5.5 while in Chicago the rate was 3.4. It may be that patients with serious complications were removed in numerous instances to nearby municipal hospitals. This may account at least partly for the higher maternal death rate in the cities.

Surprisingly enough, the birth rate per 1,000 estimated population was distinctly lower among the rural than among the urban people. Even a considerable error in the estimated population would not compensate entirely for the substantially lower birth rate in the rural areas, 13.2 per 1,000 against 18.6 for the cities, exclusive of Chicago. The birth rate for the State was 14.6 and for Chicago, 13.8.

This experience suggests that the time has passed when cities can look with confidence to the country for an inexhaustible source of new blood. The trend appears to be definitely toward smaller families in the rural districts.

On the other hand, the improvement in infant and maternal mortality has been much more rapid in recent years in the rural than in the urban localities. One reason for this, no doubt, is the rapid extension of public health service into the rural areas, especially programs of infant and maternity hygiene. Nursing services particularly have been expanded into the country districts.

DOES ALCOHOL CAUSE ACCIDENTS?

The November 1st issue of Illinois Health Messenger comments on the use of alcohol as a cause of accidents:

In an attempt to find a truthful and accurate answer to this perplexing question, so far as motor traffic is concerned, an extensive study that employed good scientific technic has been carried forward for several years in Evanston and recently reached the point where conclusions appeared justifiable. The first problem was to determine whether drivers involved in accidents had been drinking and to what extent. The second was to determine whether it was alcohol or some other factor

that led directly to the accidents in which drinking drivers were involved.

Chemical tests of the urine and of the breath were used to determine whether drivers had been drinking and to what extent. These two tests as used in the study appear to be reasonably reliable for that purpose.

First, the urine test indicated that 47 per cent of 270 drivers involved in personal injury accidents, serious enough to justify hospital care, had been drinking and that 14 per cent had consumed so much that they were unquestionably under the influence of alcohol at the time of the accident.

Secondly, a chemical test on the breath of the driver was done on samples taken from 1,750 subjects selected at representative traffic points during all hours of the day and night over a period of a week. All possible precautions were taken to see that the drivers selected were representative of the entire driving population. Only 24 drivers out of all who were approached failed to cooperate and refused to permit the tests. This part of the study indicated that about 12 per cent of all drivers on the road had been drinking and that 2 per cent had consumed so much that their blood contained at least 1 part alcohol to 1,000 parts of blood—quite sufficient to impair driving ability.

From these two studies it is clear that among 2,020 persons tested a much higher percentage of drivers involved in personal injury accidents (47%) than of the general driving population (12%) had been drinking. After considering carefully all other factors that might have influenced the cause of accidents, the authors of this inquiry conclude:

"Thus it appears that a close causal relationship exists between alcohol and accidents."

The report, which appears in the September 17, 1938 issue of the *Journal of the American Medical Association*, presents convincing evidence that the conclusion is justified.

AN EXPERIMENTAL STUDY OF THE BEHAVIOR OF SULFANILAMIDE

Fred L. Adair, H. Close Hesseltine and Lucile R. Hac, Chicago (*Journal A. M. A.*, Aug. 27, 1938), determined the elimination of sulfanilamide in certain body fluids (cervical secretion, menstrual fluid and human milk) and its transmission to and its effect on the unborn fetus. Sulfanilamide has been found in the cervical secretion and menstrual fluid, but in amounts so small that its bactericidal action on the gonococcus is questionable. The criterion of cure of gonorrhea should be based, if possible, on cultural studies as well as on smears. Sulfanilamide is excreted in breast milk, both free and as the acetyl derivative. The milk level is considerably above the blood level, and the drug is excreted in the milk for some time after the blood level is negligibly low. With doses of 2 and 4 Gm. (30 and 60 grains) the total amount excreted was never greater than 1.5 per cent of the amount of the drug administered. It was still being excreted in small amounts seventy-two hours after medication had been discontinued. Sulfanilamide is transmitted to the placenta and fetus of the rabbit and is associated with a

marked increase in the mortality of the young. It has also been found in the placenta and cord blood of the human being. Until more is known of the tolerance of the human fetus and of the newborn for sulfanilamide, the drug should be administered only with the utmost caution during pregnancy and the period of lactation. If administered to the mother, breast feeding should be discontinued during the period that sulfanilamide is excreted in the milk.

VITAMIN A DEFICIENCY AND DARK ADAPTATION

Bertha L. Isaacs, Frederic T. Jung and A. C. Ivy, Chicago (*Journal A. M. A.*, Aug. 27, 1938) present the results of their studies pertaining to the relation of vitamin A to dark adaptation as measured by the biophotometer in 143 medical students. Their original purpose was to determine whether a correlation exists between the dietary intake of vitamin A, biophotometer readings and clinical symptoms. No correlation could be detected between dietary vitamin A and biophotometer readings. Neither could a correlation be noted in the subjects between vitamin A intake and clinical signs and symptoms of vitamin A deficiency. The authors believe that nothing is gained by translating dial readings of the biophotometer into millifoot candles, because errors are introduced and the effects of certain fallacies are exaggerated thereby, and that the criteria generally chosen for the recognition of vitamin A deficiency by means of the biophotometer are not the most reliable criteria. Far more study is essential before the biophotometer or any other single similar instrument can be used for the detection of vitamin A deficiency in the human being.

DISEASES ATTACK ONE IN FIFTY

Illinois Health Messenger, Aug. 1, 1938, says:

About one in each fifty inhabitants of Illinois was attacked by one or another of the various notifiable disease during the first half of 1938. A total of 165,838 cases of such diseases were reported in that period.

Measles, of which there was an epidemic wave of unprecedented magnitude, accounted for considerably more than one-half of the cases, 87,280. Next in order of magnitude was scarlet fever with 13,547 cases; syphilis, 12,292; chickenpox, 11,767; pneumonia, 7,913; gonorrhea, 6,342; mumps, 5,690; tuberculosis, 3,968; whooping cough, 3,440; smallpox, 865; diphtheria, 847; German measles, 777; erysipelas, 469; influenza, 470; meningitis, 189; typhoid fever, 130. No other notifiable disease was responsible for as many as 100 reported cases.

Aside from chickenpox, measles, mumps and scarlet fever there were only 46,554 cases of notifiable diseases reported, or about 3 in 500 inhabitants. Syphilis, pneumonia and tuberculosis, the more serious of the widely prevalent infections, accounted together for 24,173 cases. Syphilis was slightly lower than for the first half of 1937 while both pneumonia and tuberculosis were sharply lower.

Original Articles

THE INTEGRATION OF PERSONALITY FACTORS IN DIAGNOSIS AND TREATMENT

LEROY E. PARKINS, A.B., M.D.,

BOSTON, MASSACHUSETTS

Since earliest recorded history, personality factors have held the attention of medical minds with varying interest and effectiveness. One of the chief functions of the primitive priest-physician, or medicine man, was to exorcise demons and placate evil spirits residing within the patient; bodily ills per se were quite incidental to the occasion. In later times, the physician's spiritual function diminished like the tail of a tadpole and our profession could treat only the ills of the flesh. In the Middle Ages Medicine became more fragmented; physicians, surgeons and barbers were an oddly assorted group who were frequently at ideological swords' points with the clergy who were the sacerdotal shadows of the ancient medicine men and physician-priests. In that dark era the patient as a human being was lost in the limbo of scholastic dialectic teaching. The insane or hysterical patient was smothered, drowned, or turned loose in the woods; in any case the social problem was settled, while hot irons and blood-letting cleansed and healed bodily ills.

The unity of medicine today revolves around the study of man with his maladies of mind and body. This necessitates an understanding of psychic and emotional as well as the somatic functions and diseases, together with consideration of environmental and social factors. All of these elements must be integrated in order to arrive at an accurate diagnosis and plan of treatment. It is idle to say that surgeons, internists, and general practitioners need to know more psychiatry; or, that psychiatrists need to know more about general medicine; however, there is some substance of truth in both statements. The whole structure of medical thought needs unifying and harmonizing and should be brought to a higher level of usefulness; a wider distribution of known factual knowledge will go far toward accomplishing this end.

The physician's avowed task and self-imposed

obligation is to help solve the personal problems that distress his fellow man; that distress may originate in body, or mind, or both. Pope¹ said: "The proper study of mankind is man." This profound and simple truth has been approached only by inches throughout the centuries of medical history. Descriptive science took notice of man rather late; astronomy came first, after that geology, somewhat nearer man; then came anatomy and biology with their subdivisions. Sociology was a late comer on the scene, and it was only in the latter part of the nineteenth century that psychology and psychiatry were studied in a serious systematic manner by such men as Charcot, Janet, Kraepelin, Freud, Jung and their contemporaries. As scientists and physicians our profession has approached a systematic study of the instincts, emotions, and appetites of man with a certain amount of timidity.

During the magnificent growth of Medicine from the time of Hippocrates, Galen, Vesalius, Harvey, and Pasteur, down to this modern complicated laboratory era, there has been much divergence of medical thought and practice. As Clifford Allbutt² has so well stated, "the chief lesson the Hippocratic period has for us is that, in practice as in honor, medicine and surgery were one." . . . "To the clear eyes of the ancient Greeks an art was not liberal or illiberal by its manipulations but by its ends." In our day we have many artificial divisions of Medicine; organs and anatomical systems have been parceled out; maladies divided, and surgery bisected as above and below the diaphragm; this portion to one practitioner and that to another. This is not a very exaggerated picture of modern Medicine. With this in mind it may be worthwhile to consider the integration of personality factors in Medicine as a common element of unity throughout the field of medical practice. After all, man himself is the "piece de resistance" of the general practitioner as well as the specialist. Personality factors enter every clinical picture whether we are aware of it or not. As one of my beloved medical teachers, the late Dr. Francis Peabody³ said, "the clinical picture is not just a photograph of a man sick in bed; it is an impressionist painting of the patient surrounded by his home, his work, his relations, his friends, his joys, sorrows, hopes, and fears." This concept is not new but its widespread acceptance has been

Oration in Medicine before the Illinois State Medical Society, Rockford, Illinois, May 2, 1939.

retarded by the divergence in medical thought and practice in the latter part of the nineteenth and thus far in the twentieth century. Some of us know from experience that the family physician recognizes the unity of Medicine. This is brought out very vividly in Dr. Arthur E. Hertzler's illuminating book, "The Horse and Buggy Doctor"; especially in the chapter entitled "Me and My Patients," which can be understood without the aid of a dictionary.

My practice is limited to the field of internal medicine; I have recently reviewed twelve hundred consecutive case histories of private patients, and shall present some observations and statistics about 216 or 18 per cent. of the number, where personality factors figured significantly in the scientific approach to diagnosis and treatment.

Each time a physician sees a patient two fundamental questions are presented, viz.: How sick is the person and how well is he. These are two distinct concepts in subjective abstract thinking, but in an objective consideration of the patient they allow of no separation. My view of health as a medical entity has some bearing on the statistics which will be presented about this series of two hundred sixteen patients who have been diagnosed as primary or secondary psychoneuroses.

There is no fixed state of perfect health; life is a constantly shifting series of phenomena. As a practical matter we certify a patient's health, or absence of it, on a certificate, but we never say in an exact quantitative manner how much health is present or absent at any given moment. In my practice I have arbitrarily fixed a score of 70 to 100 per cent. as the zone of good functional health; these are passing grades. By this I mean that the patient is free from handicapping mental or physical disease so that he is able to do his allotted tasks without a physician's immediate direction. From 70 to 50 per cent includes those patients who are able to wait on themselves, in part at least, but are handicapped to the extent of not being able to follow their usual tasks without medical guidance. Below the level of 50 per cent. the patient is sick in bed due to some cause beyond his immediate control. These are artificial divisions based primarily on function of the human being. This functional division is important and has practical value to both patient and physician, espe-

cially in considering the psychoneuroses. Knowledge of the etiological factors in this group has not advanced beyond the functional level at this time. This series of two hundred and sixteen cases excludes psychoses and alcoholics.

Why this group sought medical advice is of some interest; 41, or 22 per cent. had complaints at the emotional level; 15, or 70 per cent. had complaints related to some region of the body as well as obscure emotional complaints usually mentioned as an afterthought by the patient; while 18, or 8 per cent. had both emotional and physical complaints. Of the two hundred sixteen cases, 194, or 90 per cent., were primary neuroses, while 22, or 10 per cent. were rated as secondary neuroses. This clearly reveals that complaints related to the body are often directly or indirectly induced by mental and emotional states. Much of the separation of illness into mental and physical is made in the mind of the physician; the average patient considers himself sick or distressed and wishes to be treated as a whole human being.

Among the 194 primary neuroses there were 66, or 34 per cent. who had secondary organic pathology. The chief physical impairment among this group was malnutrition and anemia, with chronic fatigue as a common complaint. Among the total group with disorders of nutrition, 33 per cent. were overnourished or obese. Diseases of the gastro-intestinal tract included a few cases of hemorrhoids and disorders related thereto; also five cases of chronic constipation and four of diarrhea (including one case of amoebic dysentery). Neuromuscular complaints were relatively rare; these included neuritis, C. N. S. lues, backstrain, and angioneurotic edema. Post-operative or post-traumatic states were present in six instances. Organic heart disease (hypertensive, coronary, and rheumatic), was present in seven cases. In four additional cases, there were functional disorders of the heart beat. A variety of acute and chronic infections occurred in this group; those of teeth (six), and tonsils (four) predominated. Of the constitutional diseases arthritis was present six times; diabetes twice; migraine twice, and pernicious anemia three times. Two patients had cancerphobia. This list discloses that disturbed functional mental complexes are frequently associated with various states of organic debility. The diagnosis of secondary neurosis was made in 22, or 11 per cent.

where there was major organic disease; in these cases the neurosis contributed materially to the patient's disability.

Some writers report that in general practice the percentage of psychoneuroses runs as high as 40 to 50 per cent. and others say even higher. I suspect that these figures would frequently be lower if the patients were rated on the basis of their functional handicap. The percentage of neuroses in this series is lower than average, possibly because 45 per cent. of the 1200 cases were referred for study by other physicians. It is admitted that other patients in this series did not entirely conform to the usual group standards of thought and conduct, but they live without undue mental distress and function as normal persons in their environments. Perfection in personality has been very rare in my experience so that I have established the aforementioned functional divisions in arriving at diagnostic labels.

In approaching a discussion of treatment of the psychoneuroses an internist might feel a little offside according to the lore of the modern specialties. However, as physicians, we pride ourselves in being practical-minded persons who meet life on a realistic level. In this connection it is in order to ask ourselves, what do we mean by the term realistic; do we mean real, i. e., a consideration of reality as related to the patient? It would be easy to drift into metaphysics and theological problems on this theme. In medicine there needs be no hesitancy in our approach to reality; man is our major reality; what affects him in whole or in part, which leads to disability and distress, are real problems irrespective of the etiological or causal source. There is no essential medical difference between the consideration of the psychoneuroses and in consideration of bacterial or organic disease entities. The physician's capacity involved in formulating concepts of clinical biological chemistry can be equally capable of solving most of the problems of clinical psychic disturbances, granting that the practical and realistic attributes of the latter are accepted. As Peabody⁴ stated in his excellent essay on "The Care of the Patient," "the physician who attempts to take care of a patient while he neglects this factor (the personality) is as unscientific as the investigator who neglects to control all the conditions that may affect his experiment." One cannot con-

sider the diagnosis of the psychoneuroses at the clinical level without discussing treatment because the two merge and are inseparable in actual practice.

Of this series of 216 cases, 204 had one or more treatments by psychotherapy; 88, or 43 per cent. of the latter, had treatments for organic defects previously mentioned, which were coincidentally present. Twelve cases received no treatment; and explanation of this figure is *à propos*. A few times early in my practice I made the mistake of letting the patient influence my decision in regard to stating the exact diagnosis or in attempting some treatment; this was a clinical error. When it is impractical on account of the time element, or for other valid reasons, it is good sense and sound judgment not to attempt treatment, especially when it is recognized that a psychoneurosis is usually a chronic functional disorder which frequently requires an appreciable length of time for improvement. I declined to treat twelve cases for such valid reasons.

Of the 216 cases, 50 per cent. were referred by other physicians or were seen in consultation; as a result, some of these patients were often seen only once or twice. The number of treatments per case has varied widely. The total number rated cured are 40, or 19 per cent.; 129, or 60 per cent., were improved; and 46, or 21 per cent., are unimproved. Cures are rated as such after one to four years, some are as long as ten years. I have had no opportunity to make a detailed follow-up of these cases, but hope to do so. In an excellent review of a ten-year follow-up of 1186 cases of neuroses reported by T. A. Ross,⁵ 547, or 45 per cent., reported themselves well, and 306, or 25 per cent., as improved; this leaves 30 per cent. of his series as unimproved or unreported. His excellent books, "The Common Neuroses," and "Prognosis of the Neuroses," are written in practical clinical language that can be grasped by the average physician and are well worth reading.

The following case histories will illustrate what I have considered as important handicapping personality factors, and their relation to diagnosis and treatment.

Case 95. (Referred by Dr. Robert Curtis). Mrs. J., aged 42, husband and two children living and well. This patient had never had any serious illness; pregnancies normal and marital sex relations normal. *Present Illness*: The patient related that since childhood she

had not been able to go beneath the ground; she could not ride in subways or go through tunnels without becoming hysterical and losing consciousness, and at times vomiting. She had always lived in the vicinity of Boston and had used many subterfuges to avoid the subways. While in college she frequently walked several miles to avoid the subway. At the time she was seen, March 1936, she wished to go to New Orleans but felt emotionally unable to face the decision because it necessitated going via railroads which traversed several tunnels. *Physical Examination:* Physical examination was negative except for moderate erosion of the uterine cervix, for which she was referred to a surgeon. Laboratory: Hemoglobin 70%; red blood count 5,910,000; blood Hinton negative; urine normal. After the examination she was asked if she had had any especially unpleasant experiences in childhood. She stated that her childhood was without any major emotional disturbance; she could not think of anything that might be related to these attacks. She was asked to reflect and return one week later. At the second interview she could only remember two unpleasant experiences which she thought did not amount to much. At five years of age she attended her father's funeral and saw the casket lowered into the grave "and it never came up." She said this frequently bothered her mind for several years in childhood. About one year after this experience she was playing with a boy companion near a highway by a brook. The patient put her head inside a culvert that ran under the highway; the mischievous boy pushed the patient into the culvert which frightened her very much. These memories were all she could think of. She was asked if these experiences might in any way be remotely related to her feelings of horror, etc., when going underground. She was not certain, but thought it might be possible. She was reassured that there was a very probable connection and she was advised to go to New Orleans with her husband, who was told about the results of this examination. The patient was not seen again.

Four months later the husband reported that the patient made the trip to New Orleans, rode through all the tunnels, and since has ridden through subways in a normal manner. She has remained cured for three years. Her complaint was at the emotional level; she was a college graduate with an alert personality and had met all other personal and family problems on a realistic basis. Her insight and decision were rapid. She was cured in two interviews; was this a trivial case because of the ease of cure? Ross⁸ in his reports on prognosis in neuroses says: "It is easy to call any case trivial if the treatment which was associated with recovery was simple. A better definition of triviality is to know the amount, and especially the duration of suffering which the particular handicap caused and what would have happened if that treatment had not been given." This patient's disability had continued for over thirty years.

One cannot refrain from mentioning that intelligent application of mental hygiene in childhood would have prevented this patient's long emotional disturbance. It is to be hoped that

some day the formal education of children will include the role of the emotions in relation to conduct and physical feelings. If this were done, adult functional emotional disturbances would become much less frequent.

The following two cases were referred to the surgical service of Dr. Howard M. Clute; I saw them in consultation.

Case 25, Mrs. A., 71 years, a widow whose husband had been dead several years; two children, a son 46 years, living and well, and a daughter, 44 years, single, living and insane (dementia precox); no miscarriages or still-births; otherwise family history negative.

Present Illness: In December 1935, patient entered the New England Baptist Hospital on account of a recurrence of gall-bladder symptoms which had bothered her intermittently for six years. Four days before entering the hospital, she had an acute stinging pain which radiated from the right upper quadrant to the right shoulder. Cholecystograms in another city, six years previously, and at this time revealed gall-stones. The third morning in the hospital at 7:00 A. M., she was found in a semi-conscious state; she complained that she felt sure that she was going to die. Physical and laboratory examinations were essentially negative; a diagnosis of hysteria was made. The patient recovered within a few minutes and ate breakfast as usual. It was suspected that this emotional episode was the outcropping of some subconscious psychic complex.

Later the same day the patient was seen again when her past history was reviewed. Three years previously she had developed hypertensive heart disease with a moderate amount of decompensation. A letter from her physician in another city stated that after taking digitalis and sedatives she had gradually improved. During this period of three years, she had taken some member of the barbiturate series three times daily. At this time her heart was fairly well compensated; cardiac symptoms were palpitation and occasional dyspnea; she felt it very necessary to take the sedative three times per day because she said it gave relief.

The circumstances of her life at the time of developing heart failure are of interest. She was very active in church and social affairs; she was on many committees and was extremely busy; attended teas and social functions frequently; she also gained considerable weight as a by-product. She felt that she "had to be doing something"; she had a sense of compulsion in regard to most of her life. After she had related these experiences she was told that her tale resembled that of a person who had been unhappily married. She wished to know why this was said; then after a moment of reflection she said this was so in her case, but that she had never mentioned it before.

The patient then revealed that her husband, a very successful man, had domineered her for many years. For several years prior to his death their marital sex relations had been nil. He was moody and would disappear for two or three weeks at a time. Her recital of his actions suggested that he might have had a

mild manic depressive psychosis. At his death she felt a great relief and was thankful that he was gone, although to the world she was in mourning and conformed to correct social customs.

Also she related that she was very depressed at times because of her daughter's hopeless insanity; the daughter has delusions and hallucinations, one of which is that she is a prostitute and is the mistress of a certain fictitious man. The daughter writes daily licentious amorous notes to this make-believe person. The mother's fixed ideas of puritanical morality have suffered a serious impact from this source. She often has a sense of depression and a marked sense of guilt because of the daughter's supposed waywardness. A sympathetic explanation that the delirium of insanity is no more serious in its personal implications than the delirium of typhoid fever greatly relieved the patient's mind; she had immediate improvement from this particular depressed state.

It may be asked how these mental states have affected this patient's general health. After the above recital, the patient was asked again why she took barbiturates three times per day. The sedative was prescribed for her insomnia as well as for tachycardia and occasional dyspnea. Finally she said the sedative gave relief from "awful memories," which were found to be memories of her late husband and the insane daughter. It was really these cruel memories which caused insomnia and made her nervous. The frequent tachycardia and palpitation were caused to a large degree by the same psychic stimulation. After much persuasion and trial, she gradually left off the sedatives. Within three months she slept well with no drugs and her heart action steadily improved so that the dose of digitalis was reduced from ten to five grains per week; and she was able to go shopping without undue strain, something which she had not been able to do for a long time.

Before she left for the summer in June, 1938, this patient stopped at my office to say good-bye; she said that she felt like apologizing because she felt so well. The following autumn she returned to the city and had a mild recurrence of depression over some changes in her daughter's physical condition; after a few days this depression disappeared. She has spent the third year fairly well for a patient with heart disease of arteriosclerotic origin. This past winter her heart has continued to be fairly well compensated, but she had another relapse of depression about her daughter. Knowing the patient's subconscious sense of guilt about her daughter, it was suggested that the mother re-furnish the daughters' room at the private sanatorium. This was arranged; the daughter now lives in a new environment which makes her no better and no worse, but the mother has been helped very much.

The personality factors in this case are more complicated than in Case 95; but the value of integrating these factors at the diagnostic and therapeutic level has been of appreciable benefit to the patient. She is not completely cured, but she has a better grade of health and enjoys a

larger measure of happiness which is the common pursuit of mankind.

Case 145, Mrs. P., entered the hospital in April, 1936. This patient was a young woman, twenty-four years of age; happily married, husband living and well; there were no children. She had been referred for surgical treatment of possible hyperthyroidism. *Present Illness:* For the preceding five years she had become increasingly nervous accompanied by the loss of nineteen pounds weight, together with marked ease of exhaustion. Also she complained of trembling of the hands, profuse sweating and flushing of the skin. She was easily emotionally upset and cried over "nothing." One month before entering the hospital she had developed diarrhea, eight to ten stools per day, accompanied by occasional hematemesis; also a few times small amounts of red blood were seen in the stools. Palpitation had persisted for many months. She had been a bed patient at home for two weeks prior to hospitalization. Her family history was apparently not significant; father, mother, and three sisters were living and well.

Physical Examination: The patient weighed 98 pounds; before this illness her average weight had been 117 pounds; skin was smooth and moist; hands showed coarse constant tremor; eyes staring but no exophthalmos. Ears, nose, and throat negative. Neck normal, no thyroid enlargement. Lungs clear; heart normal except for a constant rate of 100 while lying in bed. Temperature normal; abdominal, pelvic and rectal examinations normal. Extremities normal; knee jerks equal, hyperactive. Laboratory: BMR +1. Blood Hinton negative. Hemoglobin 85% (Sahli), r.b.c. 4,400,000; w.b.c. 8,450. Urine normal.

This patient had most of the signs and symptoms of hyperthyroidism, but it was definitely decided by Dr. Clute that the patient did not have this disease. It was suspected that some emotional personality factors might be involved. While taking the patient's history it was observed that her stream of thought was sluggish. Apropos of nothing she suddenly asked: "Why do I have this fear when I know there is nothing to fear?" She had no explanation as to why she asked this question. She was asked to give details of her nervousness.

She then related that five years previously at nineteen years of age, she had had a series of hysterical attacks intermittently over a period of weeks. She had a phobia of not wanting to be left alone, and could not remain in certain rooms at school. For a period of months she could not talk to anyone without having her back to the wall, because she had a constant fear that a man might jump at her. These feelings gradually disappeared so that she was not annoyed much for a year or more. Three years previously she threw herself actively into social affairs, but tired of it after a season because she became exhausted easily and began to have transient recurring attacks of nervousness. About this time she became engaged and decided to be married, hoping that married life might be a cure for her troubles. After two years of married life she

had found it made no difference, as her symptoms became more intense and persistent.

She then related that her sleep was troubled. She had frequent nightmares; she would awaken in great fright, had palpitation, sweat profusely, and would be completely exhausted. In her dreams she was pursued by a monster.

It had been noted that while discussing her family history, any reference to her father always brought a sharp reply tinged with anger and sarcasm; she stated once that she hated him. At this time it was suspected that the patient's psychic disturbance had some direct connection with her father. She was asked if he had assaulted her. She replied that she did not wish to answer that question; this ended the interview.

The following morning the patient's husband telephoned that she wished to see me; she had talked to him and decided to answer the question. She related that her father was a chronic alcoholic who had been fairly successful in monetary affairs and had always domineered the whole household. Five years before, while sober, he had assaulted the patient when they were alone. The patient's symptoms of nervousness developed not long after this episode. Soon afterwards she procured a pistol to shoot her father, but due to a miscalculation on her part he did not appear on the scene; later her courage failed, so this idea was abandoned.

The patient readily understood that her emotional disturbances had affected her physical feelings and had had much to do with her lack of interest in life. She was told that her unfortunate experience could account for her palpitation, trembling, sweating, and sense of exhaustion. She remarked that she had suspected this herself. She was advised to get up and be an ambulatory patient while being treated for the mild secondary anemia and diarrhea, both of which were due to dietary deficiencies. Within five days anti-anemic therapy and a high vitamin diet gave complete relief from the diarrhea, and restored her blood level to normal; the pulse rate dropped to 80. She was discharged to the care of her family physician, who was told the details of the history. He reported three months later that she had continued to improve and that most of her nervous symptoms had disappeared. It would be difficult to make a clear-cut differentiation between personality factors and purely physical defects in the case of this patient. The essential element for consideration was the unified concept of the patient as a human being, and the integration of personality and social factors with the symptoms and physical signs.

These case reports emphasize Janet's⁷ statement that "the study of the mental state of the patient can sometimes be useful to explain many disturbances and to give some unity to apparently discordant symptoms." It is obvious that the capacity to be relieved or cured is a major factor in treatment; some personalities have defects or omissions: it is impossible to put a quart into a pint measure. It is futile and a waste of time to attempt to re-educate the emotional por-

tion of an adult's personality if the person left school in the grades and has since not advanced much beyond the I. Q. of childhood. Irrespective of so-called culture or social status, such patients rarely make any marked or permanent improvement. Shakespeare had this group in mind when he mentioned the parable of the silk purse and the sow's ear.

What is the best method of treatment of the psychoneuroses? All physicians use some type of psychotherapy, the kind that works best with you is proper for you to use. However, much fundamental information that is universal in application is available in many texts and journals. I consider Freud's ideas of invaluable help, reading his case histories is worthwhile. I do not subscribe to psychoanalysis as a practical method of treatment for general use. There isn't enough time and there are not enough physicians in the world to treat a small fraction of those who need help, if this were the only treatment. However, psychoanalysis may be of very definite value in some difficult cases. It is to be rated as part of the psychiatrist's special repertoire of therapies. Jung's⁸ recent simplified classification of the instincts and appetites is a practical contribution for clinical use because of the fundamentals elucidated. He says: "The separation of psychology from biology is purely artificial because the human psyche lives in indissoluble union with the body. Psychology, biology, and physiology are inseparable in actuality . . ."

As you all know, Adolph Myer coined the term psychobiology; and Adler, the Viennese pupil of Freud, set forth the theory of the inferiority complex. Their ideas have been valuable contributions and have aided in giving us a better understanding of personality factors in all branches of Medicine. The psychoneuroses are something like arthritis, many explanations are offered as to the cause, and the treatments are legion. Also, both conditions tend to recur or be painful in moody weather. Magendi,⁹ the founder of experimental pharmacology, considered medicine as a "science in the making," so we look to the future with faith and assurance that our profession will continue to explore this realm of the personality and give us still better methods of preventing and treating the mental ills of man.

This résumé of the integration of personality

factors in the diagnosis and treatment of a series of twelve hundred private patients reveals that two hundred sixteen, or 18 per cent., were diagnosed as psychoneuroses; sixty-six, or 34 per cent., of the two hundred sixteen cases had coincidental organic pathology. Treatment by psychotherapy resulted in forty, or 19 per cent., being cured for one to four years; one hundred twenty-nine, or 60 per cent., were improved; and forty-six, or 21 per cent., were unimproved.

Irrespective of our field of practice, as physicians, we have a universal interest in the patient as a fellow human being. It has been my observation that as a profession we tend to dispense along with scalpel, potion, and pill, those human intangible therapies of kindness, discipline, sympathy, and encouragement. I am sure that your patients will remember the latter long after the former have been forgotten.

REFERENCES

1. Pope: Essay on Man, *Epistle II*, Line 1.
2. Allbutt, T. Clifford: *The Historical Relations of Medicine and Surgery*, page 11.
3. Peabody, Francis Weld: *The Care of the Patient*, page 15 (Harvard University Press).
4. Peabody, Francis Weld: *The Care of the Patient*, page 48.
5. Ross, T. A.: *An Enquiry into the Prognosis in the Neuroses*, page 33, Cambridge Union Press, 1936.
6. Ross, T. A.: *An Enquiry into the Prognosis of the Neuroses*, page 33.
7. Janet, Pierre: *The preface of The Major Symptoms of Hysteria*, The MacMillan Company, 1924.
8. Jung, Charles Gustav: *Factors Determining Human Behavior*, page 49-63, Harvard University Press, 1936.
9. Garrison, Fielding H.: *History of Medicine*, page 112, fourth edition, 1929.

12 Bay State Road

ROENTGEN CONSIDERATION OF LESIONS IN AND ABOUT THE LARYNX —DIAGNOSTIC ASPECTS

ADOLPH HARTUNG, M. D.
CHICAGO

Although the larynx and adjacent structures offer favorable conditions for roentgen examinations because adjacent air containing passages render them readily visible, this method of examination is not being used as frequently as it deserves. This neglect is not due to lack of available information for numerous comprehensive roentgenological studies have been made and published relating to anatomic, physiologic, pathologic and clinical aspects of them. The most of

this knowledge has been incorporated in Hay's¹ monograph on "The Neck, Roentgenologically Considered," but numerous articles relating to special phases of the subject have appeared in the literature since its publication. Lack of dissemination of this knowledge may be partly responsible, but failure to appreciate its practical value not only by general practitioners but even by laryngologists and roentgenologists is undoubtedly the main reason for its limited application. One reason for its unpopularity with roentgenologists may be the frequent inability to translate objective findings into terms of clinical entities without correlation to direct or indirect laryngoscopic examinations or biopsies which are not always available. Many laryngologists on the other hand fail to appreciate how the roentgen findings may supplement the information obtainable by other methods as to the nature, exact location and extent of a lesion. In some cases the roentgen examination may be the only practicable method for obtaining such information. In others it may greatly facilitate further procedures for diagnostic or therapeutic purposes. Practically always cooperation between the clinician and roentgenologist is necessary for correct interpretation of findings. Interest and enthusiasm for the method is invariably fostered by use of it.

A few words relative to technique may be apropos. A preliminary fluoroscopic examination is usually advisable, as it permits observation of the parts with respiration, phonation and deglutition and also observing contrast media which may have to be given to obtain desired information. Films offering a maximum of soft tissue contrast present the most reliable diagnostic data. Lateral views of the neck are usually the most important, but sagittal exposures may be indicated for additional information. Unfortunately, practically all details are obscured by the superposed spine structures in this position as made in the usual manner. Recently a method originally introduced by Rethi,² tending to overcome this difficulty by the use of intra-pharyngeal films, has been revived largely through publication of a monograph by Waldapfel.³ In our experience with it, definite advantages have been apparent in selected cases by being able to demonstrate conditions which could not be shown by external films. Special procedures such as drawing the larynx forward by means of a curved

Read before Section on Radiology, Illinois State Medical Society, Rockford, May 2, 1939.

sound, also recommended by Waldapfel, or over-distending the air passages by the Valsalva method as suggested by Jönsson⁴ may exceptionally disclose pathology not demonstrable otherwise.

Knowledge of the normal anatomy of the various structures of the neck and their roentgen appearances is a prime requisite for correct interpretation. The cartilaginous structures tend to ossify normally with advancing years in a fairly constant and regular manner as demonstrated by Fraenkel.⁵ The shadows cast by such ossification are often very confusing and may at times simulate pathologic processes or foreign bodies. Developmental variations occur and the possibility of unusual densities being of this nature should always be taken into consideration.

Pathology is indicated either by the presence of abnormal shadows or distortion of outlines which may be recognized by encroachment upon the air spaces. Displacement of normal structures may be a secondary manifestation. Even though inflammatory lesions cannot be differentiated from neoplasms in many instances, the location, contour and extent of the lesion can be recognized in most of them. Functional variations may serve to localize the process and disclose its nature. Opaque media may demonstrate constrictions, sacculations or irregularities of contour not visible otherwise.

As regards the indications for roentgen examinations in connection with lesions in and around the larynx, from the symptomatic standpoint hoarseness, aphonia, difficulty of speech, dyspnea, stridor, recurring cyanosis, strangling attacks, lump in throat, dysphagia or pain on swallowing, and pain or swelling in the anterior part of neck, may be present singly or in combination to suggest the need for such an examination. Relatively few patients are referred specifically for neck examinations in connection with the complaints mentioned except by men who are fully aware of the possibilities of what the roentgen examination may reveal. On the other hand many cases with the above symptoms are referred for chest examinations with a view towards getting information about the heart, lungs and mediastinal structures and usually examinations are limited to give information relating to them. In some of these cases a detailed and thorough neck examination may dis-

close the cause of symptoms which cannot be accounted for otherwise.

Before describing detailed findings of the various lesions under consideration, brief reference to foreign bodies in the neck may be appropriate because of their relationship to those structures. The cervical portion of the esophagus is the site of predilection for lodgment. As regards radio-opaque bodies, the roentgen examination can reveal both the presence and location of such bodies. Secondary changes such as abscess formation may also be disclosed by it. In the case of non-opaque foreign bodies information relative to them may depend on soft tissue changes or their presence and location may be demonstrated with the aid of an opaque meal. A foreign body may be obstructed because of a constriction which may have caused no symptoms. Follow-up examinations after removal of such bodies may be indicated to rule out the possibility of stricture.

In connection with trauma to the soft structures of the neck, the roentgen examination may be of definite value by disclosing displacements of parts of the larynx or fractures of the cartilaginous portions, especially if ossification is present. Intra-pharyngeal films may be particularly valuable to demonstrate these findings.

Inflammatory conditions of the neck may readily be shown roentgenologically by the increase of the involved structures and decrease in size of the air passages. This examination may give required information when other methods are impracticable or unsatisfactory. It is especially valuable in connection with retropharyngeal abscesses. Post-inflammatory stenosis due to infection or trauma may also be revealed both as to location, extent and degree of constriction. Narrowing of the lumen of the air passages due to external compression, can be readily demonstrated, for which reason roentgen examinations of the neck are usually indicated in connection with thyroid enlargements, tumors, or other swellings in this region.

Tuberculosis involving the laryngeal or adjacent structures is apt to give a variable picture depending upon the location and stage of development. According to Taylor and Nathanson,⁶ encroachment upon the ventricle, especially posteriorly, is one of the earliest manifestations, and may be demonstrated only on films made with phonation. Enlargement of the arytenoid eminence, thickening and distortion of the ary-

epiglottic fold, and changes of the epiglottis are later and more commonly observed findings. In the presence of a florid pulmonary tuberculosis these changes are almost pathognomonic. Otherwise they may be merely suggestive and require history, larynoscopic findings or biopsy for confirmation.

Syphilis also may produce changes which may be suspicious for lesions of this nature but more often are equivocal or indefinite. According to the few attempts which have been made to describe characteristic findings, these supposedly are more apt to involve structures located anteriorly, be hyperplastic or productive in character and produce distortions by fibrosis and adhesions. Occasionally gummata may manifest themselves as tumorous masses, the nature of which may be evidenced by disappearance under anti-luetic treatment.

Roentgen examinations are especially valuable in connection with neoplasms, firstly as an aid in diagnosis and secondly to suggest preferable means of treatment or check upon progress in connection with treatment. Benign lesions usually manifest themselves as sharply circumscribed densities projecting into air containing parts. Information relative to their size and point of origin may largely influence and facilitate therapeutic measures contemplated.

Malignant lesions may exceptionally be present as well defined localized tumors, but more often they first come under observation when so far advanced that neither their exact origin nor extent is accurately demonstrable. Tumors of the base of the tongue commonly project into the vallecula and displace the epiglottis. The latter structure, when involved, usually shows well defined enlargement and distortion. Involvement of the hypopharynx may cause pressure displacement of the larynx and it is in connection with these cases that the procedure advocated by Waldapfel of drawing the larynx forward may serve to outline the area involved. Intrinsic tumors are not always demonstrable as such. Biopsy confirmation is usually necessary for accurate diagnosis of all suspicious lesions.

Lesions of the cervical portion of the esophagus, especially in their early stages of development, may be overlooked unless the neck is examined with special care. They may manifest themselves by increase in the width of the prevertebral soft tissues in the hypopharynx but

more frequently are directly demonstrable with the opaque meal or barium filled capsules. Constrictions due to malignancy or other causes can easily be shown and small diverticula may be visualized when the ordinary examination may fail to disclose them. Temporary retension of opaque meal residues in the pyriform sinuses have occasionally led to mistaken diagnosis but a knowledge of their location and form ought to be sufficient to avoid error.

Finally, the roentgen examination may be of value in indicating the proper site for radon implantation or topical application of radium if this form of therapy is decided upon. Coutard and Baclesse⁷ have stressed the value and need for repeated roentgen examination in connection with the external irradiation treatment of malignancies in this region. It can also give valuable information in connection with tracheotomy procedures and proper fittings of tracheotomy tubes as pointed out by Jackson.⁸

The following conclusions seem justified:

1. Detailed and thorough roentgen examinations of the neck are indicated more frequently than they are ordinarily made.
2. Such studies are of greater practical value than is generally recognized.
3. It behooves the roentgenologist to acquaint himself with the diagnostic details and avail himself of their application even when not specifically asked to do so. In this way he may be able not only to increase the scope of his field of usefulness, but help to popularize a method which has far greater diagnostic possibilities than its present use suggests.

BIBLIOGRAPHY

1. Hay, P. B.: *The Neck*. Ann. of Roentgenology. Paul B. Hoeber, N. Y. 1930.
2. Rethi, Aurelius: *Meine neue Methode bei der Roentgen-darstellung des Kehlkopfes und der Luftröhre*. Zeitschrift für Laryngol., Rhinologie, und ihre Grenzgebiete. 6: 28-33, 1914.
3. Waldapfel, R.: *Methodik der Roentgenuntersuchung des Kehlkopfes*. Geo. Thieme, Leipzig 1938.
4. Jönsson, Gunnar: *A Method for Roentgen Examination of the Hypopharynx and Upper Air Passages*. Acta Radiologica 15: 125-129, 1934.
5. Fränkel, E.: *Über die Verknöcherung des Menschlichen Kehlkopfs*. Fortschr. a.d. Geb. d. Roentgenstrahlen 12: 152-168, 1908.
6. Taylor, H. K. and Nathanson, L.: *A Roentgenologic Study of Tuberculosis of the Larynx and Neck*. Am. J. Roentgenology and Rad. Ther. 32: 589-607, 1934.
7. Coutard, H. and Baclesse, F.: *Roentgen Diagnosis During the Course of Roentgen Therapy of Epitheliomas of the Larynx and Hypopharynx*. A. J. of Roentgenology and Rad. Ther. 28: 293-313, 1932.
8. Jackson, C. L.: *The Value of Roentgenography of the Neck With Special Reference to Its Use in the Diagnosis and Treatment of Laryngeal and Tracheal Obstruction*. Ann. Oto.-Rhin.-Lar. 45: 951-968, 1936.

ROENTGEN CONSIDERATION OF LESIONS IN AND ABOUT THE LARYNX

Therapy

T. J. WACHOWSKI, M. D.

University of Illinois College of Medicine,
CHICAGO

Lesions of the larynx which warrant consideration from the viewpoint of therapeutic irradiation are those of inflammatory and neoplastic origin.

The inflammatory lesions do not concern us greatly because of their usually self-limited course and the adequacy of therapy with other means. In passing, it might be said that judicious small dosage irradiation has been found of value in these conditions, especially when there is perilaryngeal involvement of the phlegmonous type.

Of the neoplastic lesions, the benign ones are ordinarily adequately handled by surgery. It is in the field of malignant neoplasms that there is the greatest need for advancement. Prior to the advent of adequate irradiation therapy, the field was in sole possession of the surgeon. Over a period of years it was established that only those lesions which were still intrinsic in the larynx were operable. Some surgeons have at times widened these indications and attempted more radical procedures. Their efforts have not been fruitful, however, resulting in high operative mortalities and frequent recurrences. Galloway,⁵ in a very rational presentation of the subject, limited the surgical attack to 1. the intrinsic lesions and 2. those involving the epiglottis without extension to the tongue.

In intrinsic carcinoma of the larynx the percentage of surgical cures is high. The reports of New,¹¹ St. Clair Thompson,¹⁶ Jackson,⁷ Orton,¹² McKenty,¹⁰ and Fielding Lewis⁹ are indeed imposing. These workers obtain from 63% to 79% three-year and from 38% to 58% five-year cures. However, their material is carefully selected and, therefore, the procedure is available to only a few of these unfortunate patients.

Irradiation therapy may be applied either internally or externally. Quick¹³ has described the early trials with radium internally. Despite improvements such as the laryngostat devised by H. E. Martin and the Finzi-Harmer⁴ method of

inserting radium following fenestration of the thyroid cartilage, the intrinsic use of radium has not led to significant results and untoward accidents are frequent. Recently, Simpson¹⁵ has devised a radon holder which is inserted into a bronchoscopic tube. Daily therapy is thus administered by a bronchoscopist.

External irradiation may be applied by either high voltage roentgen rays or the radium bomb. No significant difference in results has been reported thus far.

The accepted rational of the protracted intensive method of irradiation therapy is the differential action of gamma rays on the more undifferentiated cells of the body. This principle was first enunciated by Regaud and was applied to x-radiation by Coutard.

Irradiation is accepted as the method of choice for all inoperable cases. We are, therefore, concerned only with the proper indications for either surgery or irradiation in the borderline or frankly operable cases. When Coutard, and those who followed him, began to utilize intensive x-ray therapy, they naturally chose only hopeless cases. In time, as results encouraged them, they attempted earlier cases. To date, however, the number of intrinsic cases treated has been very small and there are no reports available on five-year results. Junl⁸ treated 21 intrinsic lesions between 1931 and 1935 and of these 7 were without sign of disease in 1937, a rate of 32%. H. E. Martin in 1935 reported 2 of 4 intrinsic lesions alive and well from 18 to 42 months. Recently, Harris and Klemperer⁶ reported a good primary result, over one year, in 12 of 16 lesions of the vocal cord, or 75%. In view of the observation of Schinz and Zupfinger¹⁴ and Coutard¹ that those patients who pass one year without evidence of disease will probably stay cured, their results seem promising. Although Coutard has not specifically published data on intrinsic cases, he has from the first stated "x-ray therapy of carcinoma of the larynx is relatively easy when the growth has only slightly immobilized the muscle and not yet invaded the cartilage. In these cases, there are few failures and few accidents."² A similar optimistic vein is noted in the works of many authors and it is conceded that the curability of carcinoma of the larynx by irradiation is greatest in the intrinsic lesion and decreases as the growth is removed further from the vocal

Presented before Section on Radiology, 99th annual meeting, Illinois State Medical Society, Rockford, May 2, 1939.

cords. The method is so recent, however, in the experience of most of the radiologists that they have not compiled series large enough to warrant publication. Quick¹³ is most enthusiastic about the advantages of radiation over surgery.

It must be admitted, however, that there is apparently a group of intrinsic carcinomas in which irradiation has failed despite competent therapy. These are undoubtedly radio-resistant lesions and every effort is being bent to determine the reason for this resistance. Correlation with the classification of Broders has not met with entire success, partly because⁶ the biopsy section does not always reflect the general characteristics of the tumor as a whole. Coutard separates all laryngeal carcinomas roughly into the cancers composed of undifferentiated cells and those composed of differentiated cells. He cites certain characteristics of growth and habit as characterizing each group, especially the tendency of the differentiated cells to infiltrate the intermuscular spaces and even penetrate the muscle fibers themselves, for which it has a special affinity.

In the undifferentiated group he recommends irradiation as the method of choice in all cases since it never is biologically operable, due to early and widespread metastasis. If surgery is insisted upon, he recommends preoperative irradiation in order to destroy the most fragile cells, which are the most dangerous from the standpoint of surgical dissemination. In the differentiated group, cure by radiotherapy is almost impossible, so surgery should be the method of choice. If the surgery is inadequate because of more extensive disease than was anticipated, radiation should be given immediately to take advantage of the temporary post-operative cellular activity which makes the cells more radio-sensitive.

Occasionally a fungating intrinsic tumor is seen with an immobile cord. The biopsy shows anaplasia. The indications then are not clear cut for either method of therapy. Irradiation should be started and the case observed daily. If at the end of 2,000 to 3,000 r, total dose, the tumor shows marked regression and the cord becomes mobile, the irradiation is continued. If, however, the cord is still immobile, it indicates infiltration of the muscle and surgery is indicated. This type of cooperation between the laryngologist and the radiologist should give the

patient the best chance for a permanent cure without losing sight of the desirability of preserving voice.

The technique of the irradiation varies considerably, depending on the size of the lesion, the age and condition of the patient and the presence or absence of metastases and infection. It has been shown by Coutard that if infection is prominent it is very advantageous to precede the main course of therapy by a short period of treatment intended to control or eliminate the infection and to favorably modify the vasculo-connective tissue. The dose varies from 5 to 50 roentgens delivered through rather large portals over a period of 13 to 26 days.³

The cellulocidal therapy is best delivered through as small portals as is possible in order to preserve the general condition of the patient. With fields approaching 100 sq. cm. in area, the general effect on the patient is so marked that often irradiation must be discontinued before there is an adequate local effect. Hayes Martin has called attention to the advantages of the round portals as compared to the square ones. With them, there is less needless irradiation of probably uninvolved tissue. Recently, the use of various medications such as liver extract, thiamine chloride, nembutal and intravenous glucose has been of great aid in preserving the general tolerance of the patient. There is a great variation in the local and general tolerance of individual patients. In one of our cases, irradiation was stopped at a dose of 2,800 r \times 2 delivered through 10 cm. portals because of marked local reaction and toxemia. In another case we delivered 4,700 r \times 2 through similar portals with only a moderate local and general reaction.

In the average case, the radiation therapy should be planned so as to deliver the calculated dose in about 25 to 30 days. With very sensitive lesions, the daily dose can be increased so as to complete the therapy within a shorter time, but in most cases, and especially in the relatively resistant ones, the large daily dose has the effect of unfavorably modifying the tumor bed. Very few cures have been reported with treatment delivered in less than 15 days. The shorter treatment period makes it difficult to estimate the response of the tumor and the severity of the reaction which will develop. If a longer time is utilized, at the end of about the 20th or 25th

day one can evaluate the progress of the case and make a decision as to further procedures. Protraction of the therapy over more than 60 to 90 days introduces the risk of "radio-vaccination." This is an increased radio-resistance of the tumor cells, probably due to alteration of the vasculo-connective tissue of the tumor bed. In highly resistant cases, it may be necessary to protract the dose considerably and this unfavorable change should be borne in mind.

It has been found that, using average sized portals (50 sq. cm. \pm), most of the successfully treated cases fall within a certain dosage zone, usually $4,000 \text{ r} \times 2$ (measured in air). Increasing the dose greatly above these figures has not been productive of increased cures and has greatly increased the danger of late radiation damage. Increasing the dosage with increase of filtration and the use of multiple small portals is logical, but the production of deep radionecrosis before skin destruction occurs should be guarded against.

The adequate therapy of the regional metastases has been much more of a problem than the cure of the primary lesion. Their presence has usually dictated the use of large portals. It is probably preferable, however, if the glands can not be included in the beam of a small portal directed at the primary lesion, to irradiate the glands through separate small portals. Martin prefers to implant the residual nodes with radon seeds, often surgically exposing their external surfaces in order to allow of more accurate placement.

SUMMARY

The relative positions of surgery and irradiation in the treatment of carcinoma of the larynx have been briefly presented. The indications for the use of either method have been discussed. Mention was made of the theory of protracted fractional irradiation and suggestions made relative to the method of application.

DISCUSSION

Dr. Harry A. Olin, Chicago: I would like to ask Dr. Wachowski how often he meets with edema of the larynx following irradiation and what he considers the safest method to use in these cases.

T. J. Wachowski, Chicago (closing): Edema of the larynx is quite commonly encountered if there has been a great deal of infection present and if the initial doses are high. If you give rather small doses for a few days, you can very often get an absorption of part of the lesion and then go on and give much higher doses without coming to an obstructive edema.

If you start right in with 250 to 350 roentgens, an edema of obstructive nature is quite prone to follow.

The best sized portals is quite a problem. The smallest portal you can use, and still make sure you are getting in all of the lesion, is the best. The round portal is better than the square. It has been shown that a 2 to 3 centimeter lesion aimed at with a round seven centimeter portal is apt to be included pretty well in the field of irradiation. If you use a 5 centimeter round portal, you are very apt to be under irradiating some of the lesion, even though it is only 2 to 3 centimeters in diameter.

The aiming of the portal is very important and has to be very accurate if you use small portals. If the patient gets a little restless while receiving the therapy, you may be shooting away from the lesion entirely.

BIBLIOGRAPHY

1. Coutard, H.: American Journal of Roentgenology and Radium Therp., 28: 313, 1932.
2. Coutard, H.: Lancet, 2: 1, 1934
3. Coutard, H.: X-Ray Treatment of Inoperable Carcinoma of the Larynx. Surg. Gyn. and Obst., 68: 467, 1939.
4. Diggle, F. H.: The Treatment of Intrinsic Laryngeal Cancer. J. of Laryn. and Otol., 52: 463, 1937.
5. Galloway, T. C.: Irradiation or Surgery in Cancer of the Larynx. Illinois M. J., Sept., 72: 276, 1937.
6. Harris, W., and Klemperer, P.: Pathologic Differentiation Between Radiosensitive and Nonradiosensitive Malignant Neoplasms of the Larynx. Arch. of Otolaryn., 28: 355, 1938.
7. Jackson, C.: The Larynx and Its Diseases, 1937, W. B. Saunders and Co.
8. Juul, Jens: Dosage, Duration of Treatment, and Reactions in Protracted Fractional Roentgen Treatment, With Special Reference to Carcinoma of the Upper Air Passages. Radiology, 30: 718, 1938.
9. Lewis, F. O.: Treatment of Cancer of Paranasal Sinuses, Tonsils, and Larynx. Surgical Clinics of North America, 7: 339, 1927
10. McKenty, John: Cancer of the Larynx, 1927.
11. New, G. B.: The Surgical Treatment of Carcinoma of the Larynx. Surg., Gyn. and Obst., 68: 462, 1939.
12. Orton, H. B.: Cancer of the Larynx. Archives of Otolaryngology, 1938, 28: No. 2, p. 153.
13. Quick, Douglas: Carcinoma of the Larynx: Janeway Memorial Lecture. Amer. J. of Roentgenology and Radium Therapy, 38: 821, 1937.
14. Schinz, H. R., and Zuppinger, A.: Siebzehn Jahre Strahlentherapie der Krehse, Georg Thieme, Liepsig, 1937.
15. Simpson, F. E.: A New Instrument for the Irradiation of Intrinsic Carcinoma of the Larynx. Transactions of the International College of Surgeons, 1939, vol 1, No. 2, p. 207.
16. Thompson, St. Clair: Subglottic Cancer of the Larynx. Jour. of Laryn. and Otol., London, 52: 803, 1937. Also quoted by Quick (13).

SUGGESTIVE TREATMENT OF MAXILLARY SINUSITIS SUBSEQUENT TO DENTAL SURGERY

J. SHELDON CLARK, M. D.

FREEMPORT, ILL.

A closer cooperation between men who limit their practice to that of the head, has been the thought that occasioned the writing of these observations. Frequently it is that a slight bit of pathology in one part of the head will cause dis-

turbance in another region and this secondary matter become of primary importance.

During the past few months I have had three cases of infections of the maxillary sinus occurring in adults that was directly due to infection of dental origin. Owing to the peculiar architecture of the antra of Highmore and their close contact with the nasal, the oral and the orbital structures makes this matter of prime import to the man practicing in one or more of these fields. Teeth that have become carious and have been long neglected give rise to an accompanying osteitis which may be a very troublesome factor. When we recall that the roots of the molar teeth of the upper jaw come in such close proximity to the floor of the antrum and with sometimes but a layer of mucous membrane separating the floor of the antrum from the tooth root; then we can well see how it is that the antrum of Highmore is so often opened into by dental surgeons. Again, if there is not infection of the antrum at the time of this surgery, then how easy it is for infection to take place.

Cases are complicated because of lack of removal at the time of extraction of one of the roots of a molar, this coupled with the fact that the antrum has also been invaded, makes for a complication which one does not enter upon with great hope of speedy restoration to normal. In addition to the presence of a root there may be an osteitis of the alveolar process and this osteitis may too be a cause of a persistent and intractable maxillary sinusitis. Such situations are always difficult to handle and will not clear up until all infection of bone has been eradicated.

During the past winter this subject of antral infection following the extraction of teeth, especially first and second molars of the upper jaw was again a part of my practice. In two of these cases dental roots still remained in situ and communication was had through the alveolus with the antrum. These roots that remain after extractions can be a great bugaboo to the dental surgeon and amongst other qualms he may have in connection with their handling is that of losing a tooth root up into the cavity of the antrum. These remaining dental roots should however be removed, especially in cases where there is in addition a perforation of the antrum as well. Of all the distressing things that may happen none is more distressing to the orthodontist than to have one of these roots slip up into the antrum

of Highmore. It is therefore well to make proper approach in these cases and this the orthodontist will do by properly making ample bony excavation so as to get access to the socket in which the offending root lies.

I have for some time past been interested in the prophylactic measures that will materially reduce the complication maxillary sinus infection by reason of the direct communication with the oral cavity either through one root penetrating to the antrum or where, as I have seen it happen, that the entire floor of the sinus overlying the point of extraction has come away at the time of the dental surgery. I do not deem it wise to permit dental roots to remain, for they later on become as it were foreign bodies in that their source of nutrition has been interfered with. They might therefore better be removed at the time of the extraction or very soon thereafter at least.

Dependence upon a blood clot to close off the sinus communication is not altogether satisfactory. In the larger centers recourse is had to oral surgeons who undertake the solution of these problems as delineated here, but in the smaller communities there is quite an interdependence of the Dental surgeon and the Oto-laryngologist so that there is a need for better team work with relation to the treatment of these cases. Then too, I have observed in a goodly number of cases that destructive inflammation has occurred in the eye by reason of an accompanying antral inflammation and an uveitis intervened which destroyed vision before anything could be done to prevent it.

Following extractions of molar teeth of the upper maxilla it is therefore well to know whether entrance has been made into the maxillary sinus by one or more alveoli opening into that region. If at the time of such surgery there is any suspicion of such an entrance having been made it should there and then be determined. It may be the means of saving a deal of trouble through leaving a direct communication with the mouth and which so oftentimes is followed by an infective process within the confines of the antrum.

Having determined that a communication with the maxillary sinus has occurred, a denture can be quickly made that the patient may wear night and day, thus preventing contamination of the antrum by food particles and the bacterial flora of the oral cavity. If there is a por-

tion of one or more roots left in situ it is also good surgery to remove them at the time and also curette away any diseased process which might later be a factor in the continuance of an infection at the floor of the antrum. It should be well understood that complications be had at the hands of oral surgeons that are absolutely impossible to predict. It may not be practical to remove such fractured root at the time and its removal may be with propriety deferred until a later time, but to leave such a situation and trust to good luck is at least questionable. Here is where a trust in a blood clot for its healing and protective value may fail in its purpose in these complicated situations.

Therefore this subject brings to my mind again and again the matter of co-operation between the Oto-laryngologist and the Dental Surgeon to the end that our patients have timely and preventive treatment. Not having such co-operation there may be a host of complications with which someone will have to deal, such as uveitis, arthritis, bronchitis carditis and a host of complications too numerous to mention.

From my association with members of the dental profession I know that the question of fractured roots of molar teeth that lie in close juxtaposition to or even entering the maxillary sinus is one of the *bête noirs* of the Dental profession. We of the Otolaryngologic group often are called in to consult or if we will, take charge of the case and so it is to be mentioned again that there be a closer relationship between our professions.

My idea of the preparation of an immediate denture in these cases of maxillary communication through the alveolar route that will hermetically seal off the antrum I believe to be sound advice and it has so proven in several cases that have come to my notice through the associations I have had with members of the Dental Profession. This subject has been a sort of "No Man's Land" in so far as either side is concerned and the cause of a deal of physical impairment.

DISCUSSION

Dr. H. L. Ford, Champaign, Illinois: I think this is too good a paper to let go without discussion, as it brings up some very definite questions. These perforated antral floors concern us, as rhinologists, to a very considerable degree. Many times, as Dr. Clark says, the dentist who has accidentally broken into the antral floor, brings the case to us for subsequent care, and often this is not an easy task.

The gist of the Doctor's paper implies that the

perforation is best closed by means of a mechanical obturator—with occasional recourse to the flap.

I have always felt that it is wise to see that all dead bone is removed, leaving no area of osteitis, and close the wound by primary suture. Where sufficient tissue is not present around the alveolus, a sliding flap must be utilized. Due attention must then be paid the antrum—as possibly a window may be required. I question somewhat the use of the obturator within the perforation. It seems to me that their use might prolong the healing period, and lead to epithelialization of the fistulous tract. It seems to me that it is wiser to close the perforation immediately.

Dr. J. Sheldon Clark, Freeport (closing): It occurred to me to use this prosthesis in cases of maxillary infection of dental origin where one already has an opening into the antrum with an osteitis of the process at the point of extraction, and an infection present or impending. In such cases I do not think the sliding flap of muco-periosteal tissue to be indicated. Where one has a perfectly clean case and there is no reason for washing out the sinus, then the sliding flap is the thing to do.

Where the case is an infected one when seen by the otolaryngologist in consultation with the dental surgeon and there is but a mild infection present, I deem such cases have no need of drastic major surgery, such as the removal of the naso-antral wall and such cases as these I have kept the antrum open for quite some time while it was being treated by washing out the infected material through the fistulous opening in the upper jaw. I believe that the use of the prosthesis will help materially in treating many of these cases of accidental opening of the antrum incident to dental surgery.

I agree that the use of the sliding flap spoken of by Dr. Ford is the thing to do at the time it is known that a fistulous opening exists into the antrum and it will prevent complications. It goes without saying that fractured roots should not be allowed to remain, trusting that all will be well.

CURRENT CONCEPTIONS IN EPILEPSY

MEYER BROWN, M. D.

CHICAGO

During the nineteenth century many writers dealing with convulsive seizures were accustomed to group all such manifestations under the heading of epilepsy just as typhoid fever, typhus fever and many other febrile disorders were at one time discussed as a single entity called "fevers." Today, however, we realize that the epileptiform convulsion is merely a symptom which may occur in a large number of different disorders. For example, epileptiform seizures not infrequently are part and often a small part of the symptomatology of intracranial tumors.

Read before Section on Medicine, Illinois State Medical Society, Rockford, May 2, 1939.

They occur in various inflammations of the brain or its coverings; and vascular lesions, traumatic lesions, degenerative lesions or congenital defects of development in the central nervous system also may give rise to convulsive seizures. Further, somatic diseases such as intoxications of exogenous or endogenous origin and generalized infections may be accompanied by convulsions. Notwithstanding this imposing array of pathogenic factors in the production of epileptiform seizures there still remain a very large number of persons in whom convulsions occur repeatedly as a result of unknown causes. In such persons there is no demonstrable organic disease of the nervous system and no disturbances in metabolism or somatic functions have as yet been shown to be responsible for the continued occurrence of the seizures. These persons may be said to have true or idiopathic epilepsy.

Whether idiopathic or essential epilepsy is or is not a single clinical entity cannot be stated with certainty at the present time. It may be true that in the group of patients labeled with this diagnosis we are including many persons who have a focal lesion in the nervous system. In such patients the epileptiform seizures may be the sole manifestation of the disease process at the time of our examination. Thus encephalitis occurring during childhood may be so mild that its occurrence is forgotten by the parents of the patient and its sole residue consists of repeated epileptic spells. A meningioma may grow so slowly that for many years it gives rise only to epileptiform seizures before it attains sufficient size to produce other neurologic dysfunction. Such instances, however, are probably insignificant in number when compared with those persons in whom no gross pathological lesion in the brain is responsible for the seizures. It may also be true that in the category of idiopathic epilepsy there are two or more separate clinical entities which we are at present unable to distinguish from each other. Conclusive proof for this suggestion is lacking, but there are certain data available in the literature to indicate that at least two kinds of idiopathic epileptic patients exist.

Up to the present decade idiopathic epilepsy has been described in the literature and most text-books as a serious disabling disease which usually terminates in mental deterioration. It is stated by Esquirol,¹ Echeverria,² Spratling,³

Féré,⁴ Gowers,⁵ Turner,⁶ Kraepelin,⁷ Dercum,⁸ Diefendorf,⁹ Henderson and Gillespie¹⁰ and many others that the majority of persons with epilepsy show progressive mental changes either at the time the seizures begin or shortly thereafter. The memory of the patient is usually impaired first; then he becomes inactive, slovenly, indifferent to his work and inefficient in its performance. In addition, violent displays of anger, cruelty, deceitfulness, irritability, boastfulness, vanity, egocentricity, excessive interest in religious matters, virtuous posturing, combativeness or periodic behavior disorders frequently occur in deteriorated epileptic patients. Because of these changes in personality such epileptic patients are unable to adjust in the outside world and therefore are permanently incarcerated in institutions for the insane or epileptic. Some authors including Clark¹¹ and Blueler¹² go further than most writers and state that mental abnormalities similar to those described above are present in patients with idiopathic epilepsy before the onset of their seizures. Both the seizures and mental changes are believed to be superimposed on a psychopathic constitution which has been called the "epileptic personality." It is also noteworthy that most authorities on epilepsy believe the appearance of mental deterioration to be independent of the frequency or kind of seizures present in the patient. This pessimistic view of the fate of persons with idiopathic epilepsy is not fully justified; in the remainder of the present discussion an attempt will be made to show that the majority, and probably the great majority of persons with idiopathic epilepsy retain good mental health despite the presence of seizures for many years.

Most text-book descriptions of idiopathic epilepsy are based upon the writings of men who studied this disorder in patients already committed to an institution for the insane or epileptic. That such patients show mental changes or have behavior disturbances is to be anticipated for otherwise they would not have been committed to an institution. Investigators working within an institution had little opportunity to observe patients with epileptiform seizures of unknown origin who remained in good mental health despite the presence of such seizures for many years. The classic epileptologists, therefore, believed mental deterioration to occur in most persons with epilepsy. A study of patients

with idiopathic epilepsy who are seen in private practice or in the outpatient clinic reveals an entirely different situation.

In 1913 Starr,¹³ who studied epilepsy in persons from the outpatient clinic and private practice stated that only 10% of patients with epilepsy become insane. The duration of the illness in his patients was not given. In 1932 Paskind¹⁴ studied 304 patients with idiopathic epilepsy from private practice; 32.8% or roughly one-third of these subjects had had seizures for six to ten years, 67.2% had had seizures for from one to four decades. Ample time had elapsed for mental deterioration to begin in these patients if it were to appear. Only 20 or 6.5% of the patients in this series showed mental changes characteristic of epileptic deterioration. In the remaining 93.5% not only were mental changes absent, but these patients continued to occupy positions of importance and trust in industry, trades, professions and the home on an equal plane with non-epileptic persons. This work has recently been confirmed by observations of Fetterman and Barnes,^{15,16} who studied epileptic patients from an outpatient clinic. Because many epileptic patients do not consult a physician but instead resort to proprietary self-medication it is not improbable that the proportion of patients with epilepsy who deteriorate is even smaller than is indicated by these studies. At any rate the non-deteriorated epileptic patient is apparently much more numerous than the mentally deteriorated ones.

In his original description of the extramural epileptic patient Paskind¹⁴ pointed out that there are other important differences between the deteriorated and non-deteriorated patient than the occurrence of mental changes. He noted that the age at which seizures first appeared is significantly greater in the non-deteriorated patients than is given for institutional epileptics by most writers. Lennox and Cobb¹⁷ and Paskind and Brown¹⁸ have confirmed this finding with additional data. Among 7,350 institutional epileptics Lennox and Cobb¹⁷ found the onset of the disease to be before the age of 10 in 46%, after the age of 20 in 18.8% and after the age of 40 in 1.6%. In 844 epileptic patients of the outpatient clinic they found the same values to be 27%, 39% and 7%, respectively. We¹⁸ studied the age of onset of epilepsy in 368 non-deteriorated patients and found that 25.6% had

their onset before the age of 10, 39.7% after the age of 20 and 7.9% after 40. Paskind¹⁴ and later Paskind and Brown¹⁹ studied the frequency with which seizures occurred in non-deteriorated epileptic patients and compared this with the frequency of seizures reported by other writers for institutional epileptic patients. It was found that both grand mal and petit mal attacks occur distinctly less frequently in the extramural patients. Further, Paskind found that remissions, or periods of time during which no seizures occurred, were more frequent and of longer duration in the non-deteriorated patient with epilepsy than has been reported in the literature for institutional epileptic patients.

From the above it seems that the clinical descriptions of epilepsy which appear in the literature and most text-books are in need of revision. The great majority of persons with idiopathic epilepsy go through life with no impairment of their mental faculties. They have fewer seizures than the psychotic epileptic patients and have more and longer remissions in the occurrence of their spells. The convulsive disorder usually begins later in life in the extramural epileptic than in the institutional epileptic patient.

Study of the literature reveals that the response of deteriorated epileptic patients to medication is not encouraging. Most authors indicate that it is possible to reduce the frequency of the seizures in such patients by sedatives but that complete cessation of seizures is attained in only a small number of patients. The report by Pollock²⁰ on the effects of treatment in patients with epilepsy treated in private practice offers a more favorable outlook. This author, by the use of sodium bromide, was able to bring about a final and complete cessation of all seizures, beginning with the institution of treatment or shortly thereafter in 46% of 63 patients with idiopathic epilepsy. Therapy was ineffectual in only 12.8% of the same patients. Among 85 patients, some of whom had seizures due to organic brain disease remissions from the spells for one to ten years were produced in 71.7%. Although there is considerable room for improvement in the treatment of epilepsy, it is apparent that this disorder in non-deteriorated patients is amenable to considerable relief.

In conclusion I should like to call attention to certain data which indicates a more funda-

mental difference between deteriorated and non-deteriorated patients with epilepsy than the clinical features noted above. All writers dealing with the etiology of essential epilepsy lay great stress on the importance of hereditary factors. Snell²¹ and others have clearly demonstrated that epilepsy and other nervous and mental diseases occur more frequently among the ancestors and collateral relatives of persons with epilepsy than among the general population. It has also been shown that the offspring of persons with epilepsy are susceptible to epilepsy and defective mental development or other neuropsychiatric disorders. Unfortunately, these studies were also limited to institutional deteriorated patients. We²² have studied hereditary factors in epilepsy, using the records of non-deteriorated epileptic patients. It was found that the hereditary backgrounds of these patients are tainted with neuropathic disturbances to a significantly less degree than are those of deteriorated patients. We²³ found that epilepsy occurred in only one of 342 children born to 163 extramural patients with the same disorder. Infantile convulsions occurred in six of these children. The deteriorated and non-deteriorated patient with epilepsy it appears show a distinct and significant difference in the relation of hereditary factors to their disorder. In other studies,^{24,25,26} we have shown that there are constitutional or inborn differences between mentally deteriorated and non-deteriorated epileptic patients.

In summary it may be said that there are not only important clinical differences between the mentally normal person with epileptic seizures and the psychotic epileptic, but that differences in hereditary background and in native or constitutional makeup suggest the existence of a fundamental distinction between these two groups of patients.

DISCUSSION

Dr. Warren G. Murray, Dixon: I wish to congratulate Dr. Brown for the logical thought presented in this excellent paper; it is, I am sure, the result of untiring effort.

Some psychiatrists state that almost all of us show signs of insanity to some degree but we are not apprehended and treated until we bother others or neglect our duties or ourselves—and so it seems with those afflicted with so-called idiopathic epilepsy—the most seriously afflicted ten per cent or less become intramural cases.

We must realize, when we compare individual cases,

the vast difference in degrees of this malady. I have known a surgeon who skillfully operated during the day, an attorney who made eloquent and sensible appeals to judges and juries—both of these men suffered from nocturnal seizures. I know now a dentist who practises his profession successfully in a town of four or five thousand inhabitants who has both petit mal and grand mal attacks; these, however, are not frequent. A brilliant minister once consulted me about his becoming unpopular with certain members of his congregation because they thought he was attitudinizing when as a matter of fact he was having petit mal attacks while delivering his sermons. The duration of all of these cases was from ten to twenty years but with rather late onset.

When the above cases are compared to some of our extremely deteriorated intramural cases in which the speech is slow and there is scarcely a coherent idea remaining, this matter of degree is obvious.

My experience with extramural cases has been very limited, but I know with that little experience, that much better results may be obtained from treatment than in intramural cases.

In the Dixon State Hospital all cases having seizures are treated, with a cessation of about seven per cent. I can well understand how this percentage can be vastly increased in those who are afflicted to a less degree by the intelligent treatment of such men as Dr. Pollock, Dr. Brown and Dr. Paskind. I know that our experiments with ortal sodium and dilantin have not given the results that were obtained by those who administered these drugs in extramural cases.

I have felt from observation that those suffering from idiopathic epilepsy, as a rule, deteriorate mentally in direct proportion to the number and probably the severity of their seizures (although I know that this statement is contrary to the ideas of many authors and that the rule has rather frequent and marked exceptions).

It seems reasonable to assume, and I believe this is borne out in many of our cases, that those developing seizures before the age of sixteen years (or the age at which the development of mental capacity is complete) are at first retarded and have a consequent deterioration—these cases would also have more time to deteriorate than those in which the onset was late. It might also be reasonable to believe that those who were afflicted to a greater degree might be more apt to transmit to their descendants the type of protoplasm which would foster the development of epilepsy—which is true in various somatic diseases such as cancer, tuberculosis, and others.

The Dixon State Hospital was founded because the Board of Administration at that time, thought there were five thousand epileptics in the State of Illinois who would take advantage of a voluntary commitment law, but it was found to have a population of less than one hundred after it had been opened for a year and most of that hundred were committed cases.

An epileptic will not commit himself for treatment until he comes into conflict with the law or becomes so incompatible in his environment that others wish his

commitment. This seems just to the vast majority who can be successfully treated on the outside without great interference with their work.

Part of the data secured by Dr. Brown and Dr. Paskind, from which they concluded that there were constitutional differences, was obtained from their study at the Dixon State Hospital and while I know that the hyperpituitary type and the hypothyroid types both seem to be afflicted, there are many who seem to be well balanced from an endocrine viewpoint and we have never had the opportunity to compare our intramural cases with the extramural variety.

Physical deficiency as well as mental deficiency seems to be present in intramural epileptics to a greater degree than in the general population and probably more than in extramural epileptics.

One of the most interesting papers I have heard recently dealt with the absence of diabetes in epilepsy. I am wondering if Dr. Brown can give us any data concerning this in extramural cases. I think I can recall only three or four diabetic epileptics in three or four thousand intramural cases.

Dr. Meyer Brown, Chicago (closing): In response to the question raised by Dr. Murray relative to the occurrence of diabetes in epilepsy, I should like to say I have not had the experience of seeing diabetes and epilepsy in the same patient. I am not in a position to give data as to the frequency of occurrence of these two diseases in one person.

BIBLIOGRAPHY

- Esquirol, J. E. D.: *Des maladies mentales considérées sous les rapports médical, hygienique et medico-legal*, Paris, J. B. Bailliere, 1838, vol. 1.
- Echeverria, M. G.: *On Epilepsy*, New York, William Wood and Co., 1870.
- Spratling, W. P.: *Epilepsy and Its Treatment*, Philadelphia, W. B. Saunders Co., 1904.
- Féré, C.: *Les épilepsies et les épileptiques*, Paris, Felix Alcan, 1890.
- Gowers, W.: *Epilepsy and other Chronic Convulsive Disorders*, ed. 2, London, J. & A. Churchill, 1901.
- Turner, W. A.: *Epilepsy: A study of the Idiopathic Disease*, New York, The Macmillan Co., 1907.
- Kraepelin, E.: *Psychiatrie*, Leipzig, J. A. Barth, 1913, vol. 3.
- Dercum, F. X.: *A Clinical Manual of Mental Diseases*, Philadelphia, W. B. Saunders Co., 1917.
- Diefendorf, A. R.: *Clinical Psychiatry*, New York, The Macmillan Co., 1924.
- Henderson, D. K., and Gillespie, R. D.: *A Text-Book of Psychiatry for Students and Workers*, New York, Oxford University Press, 1930.
- Clark, L. P.: A Personality Study of the Epileptic Constitution, *Am. J. Med. Sc.*, 148: 729, 1914.
- Bleuler, E.: *Text-Book of Psychiatry*, Transl. by A. A. Brill, New York, The Macmillan Co., 1924.
- Starr, M. A.: *Organic and Functional Nervous Disorders*, Philadelphia, Lea and Febiger, 1913.
- Paskind, H. A.: Extramural Patients with Epilepsy, *Arch. Neurol. & Psychiat.*, 28: 370, 1932.
- Fetterman, J. L., and Barnes, M. R.: Serial Studies of the Intelligence of Patients with Epilepsy, *Arch. Neurol. & Psychiat.*, 32: 797, 1934.
- Barnes, M. R., and Fetterman, J. L.: Mentality of Dispensary Epileptic Patients, *Arch. Neurol. & Psychiat.*, 40: 903, 1938.
- Lennox, W. G., and Cobb, S.: The Non-Institutional Epileptic, *Assoc. for Research in Nervous and Mental Diseases*, 7: 358, 1931.
- Paskind, H. A., and Brown, Meyer: Age of Onset of Epilepsy: Differences between Deteriorated and Non-deteriorated Patients. In press, *Am. Jour. of Psychiat.*
- Paskind, H. A., and Brown, Meyer: Frequency of Seizures in Epilepsy: Differences between Deteriorated and Non-deteriorated Patients. In press, *Am. Jour. of Psychiat.*
- Pollock, L. J.: Remissions of Attacks in Epilepsy Treated with Sodium Bromide, *J. A. M. A.*, 110: 632, 1939.
- Snell, O.: Belastungsverhältnisse bei der genuine Epilepsie, *Ztschr. f.d.ges. Neurol. u. Psychiat.*, 70: 1, 1921.
- Paskind, H. A., and Brown, Meyer: Hereditary Factors in Epilepsy, *J. A. M. A.*, 108: 1599, 1937.
- Paskind, H. A., and Brown, Meyer: Frequency of Epilepsy in Offspring of Persons with Epilepsy, *Arch. Neurol. & Psychiat.*, 36: 1045, 1936.
- Paskind, H. A., and Brown, Meyer: Constitutional Differences between Deteriorated and Non-deteriorated Patients with Epilepsy, I Stigmas of Degeneracy, *Arch. Neurol. & Psychiat.*, 36: 1037, 1936.
- Paskind, H. A., and Brown, Meyer: Constitutional Differences between Deteriorated and Non-deteriorated Patients with Epilepsy, II Anthropometric Measurements, *Am. J. Psychiat.*, 95: 901, 1939.
- Brown, Meyer, and Paskind, H. A.: Constitutional Differences between Deteriorated and Non-deteriorated Patients with Epilepsy, III Dactylographic Studies. In press.

104 So. Michigan Ave.

MEASLES IN 1938

Analysis of 400 Cases—28 Instances of Encephalitis

ARCHIBALD L. HOYNE, M. D.

CHICAGO

Control of measles from a public health standpoint has met with little or no success. Excluding smallpox, incidence is governed more by the number of susceptibles in a community than is the case with other common communicable diseases. This is because measles is so intensely contagious that susceptibles seldom escape when exposed.

One attack of measles almost always confers permanent immunity and nearly everyone in an urban population has the disease in childhood. Therefore, the frequency and extent of epidemics will be influenced by the birth rate. As the infection is uncommon prior to the sixth month of life more or less definite intervals must elapse between epidemics while the newborns are growing up to the measles age. This means that cities are likely to experience a rise and fall in measles prevalence every other year. The extent of the fall will depend on the height of the

From Contagious Disease Department, Cook County Hospital and Municipal Contagious Disease Hospital, Chicago Board of Health.

Read before Section on Public Health and Hygiene at Meeting of Illinois State Medical Society, Rockford, May 3, 1939.

Acknowledgement is made to Leona Prim, R. N., for assistance in tabulation of patients' records.

peak. For example 17,714 cases of measles were reported in Chicago for the year 1929. The following year (1930), there were only 1,033 cases reported. In 1931 Chicago had 12,229 cases, and in 1932 the number was 10,009. However, with the extensive epidemic of 1935, when there were 24,199, there followed a drop to 496 the next year (1936). Similar periodic outbreaks have been recorded in London since 1851 where the disease reaches epidemic proportions every two years.

Those susceptibles who escape measles in one outbreak are likely to play an important role in transmission of the infection a year or two later. Children often attend kindergarten during the first day or two of the prodromal stage of measles. It is at this time the infection is so readily disseminated. Later the kindergarten child or grade pupil conveys the disease to those of preschool age in the home. After practically all damage in respect to transmission has been accomplished the primary case erupts. At this point a physician may or may not be summoned. Eventually a placard is likely to be posted announcing that measles exists on the premises. Not rarely the warning sign is put up on the very day it could be removed with safety.

Little is gained by the placarding of measles. Harm may result on account of the requirement. Some mothers fail to call a physician when measles is suspected, knowing that it means the placing of a warning sign on the home. Consequently, the patient may be deprived of important scientific care when it is most needed. In addition, the chance of protecting any delicate susceptibles in the family is lost. Therefore the very purpose of the quarantine regulations is thwarted. If placarding was limited to premises where there were susceptibles known to be measles contacts quite as much would be accomplished as under the present rules. With an arrangement of this kind all measles would continue to be reportable. In many instances physicians would be called earlier and the opportunity presented to adopt immunization measures when indicated. Hobson states, "the prospects of limiting the spread of the disease by early diagnosis and segregation of infected individuals are very small indeed." Nevertheless, he says quarantine should be observed for 21 days in all instances. We are not at all in sympathy with such a proposal.

The task of controlling an epidemic of measles in a large municipality by hospitalization would be as futile as undertaking to stamp out venereal diseases in a similar manner. Moreover, the average measles patient is safer in the home than in a contagious disease hospital. Hospitalization for measles should be restricted to those patients who actually require hospital care. This limitation would include those with bronchopneumonia or other serious complications. Notwithstanding this expression of opinion, we find that London hospitalized 13,171 measles patients in the year 1935-36 (Nov. 1st-Aug. 31). This figure represents approximately three times the number of all contagious disease patients treated in Chicago hospitals during an average year. London hospitalized a total of 34,024 for all contagious diseases in a period of eight months.

In 1938 Chicago experienced its greatest measles year when 37,831 cases were reported. The epidemic, which had its inception in the late fall of 1937, accounts for the unusual number of measles patients entering the hospital. In November, four patients were admitted to the contagious disease department and the following month there were 34 new patients. From January 1 to May 31, 1938, there were 362 admissions. The grand total for these patients was 400. There were 16 additional patients with no deaths who were admitted to the hospital during 1938 after June 1. This group is not included in the statistics of this paper.

With the close of May there was a sharp drop in measles prevalence throughout Chicago. By August the number of reported cases for the entire city had declined from 1,477 with two deaths in May, to 41 with no deaths. August is also the month in which London experiences, as a rule, a sudden check on the incidence of measles. Of the 37,851 cases reported for Chicago in 1938, the first seven months of the year accounted for 37,626 and all 40 fatalities for the 12-month period were included in this number.

Among our hospital cases there were more than three times as many white patients as colored. The sexes were rather evenly divided with 205 males and 195 females. March was the high month for fatalities as is often so with the infectious diseases. This was also true for the city at large, 23 of the year's fatalities having occurred in this month.

Age is a factor to which much attention is

usually directed where measles is concerned. Therefore, I believe our hospital cases are of more than ordinary interest in this respect. Only 163 of the 400 patients were less than five years of age, whereas 237 were older. There was but one child less than six months ($2\frac{1}{2}$ months) and only 21 others under one year. Seventy-one of the 163 were from three to five years. Of the older age groups (237) sixty-seven were more than ten years of age and 24 of these were 20 years or older.

The principal requirement for admission to the hospital was the presence of complications or the severity of attack. It is not strange, therefore, that the complications enumerated are many. Eighty-eight (22%) of the patients had bronchopneumonia. Otitis media occurred in 59 (14.7%) which approximates the usual percentage for this condition in scarlet fever. Encephalitis was the surprising and outstanding complication because of its frequency—28 (7%) cases. We also had four patients with measles encephalitis at the Municipal Contagious Disease Hospital. The sum of these groups (32) gives an incidence based on all reported measles cases in the city, which recalls Stimson's estimate of less than one in one thousand.

Adenitis was present in only 2.7% (11 cases). A complication not often considered in measles was appendicitis in seven (1.75%) patients. Although the appendix had ruptured in three, all seven patients recovered, six after operation. In the remaining instance the appendix ruptured into the rectum. Ronaldson says suppurative appendicitis is rare in measles. Mastoiditis, ethmoiditis, nephritis and edema of the glottis were each observed twice in different patients. There were two cases of pregnancy, one at about three months, the other eight months. Both recovered without miscarriage.

Fatality rates were not entirely in accord with common expectations. Emphasis is often placed on the high mortality for measles in patients under five years of age. The number of deaths is usually greater. But the difference in percentage for our series between those under and over five years was not marked and there were more deaths in the older group. In the younger group (163) there were 11 deaths or 6.7%, whereas in the remaining patients (237) there were 13 deaths or a fatality rate of 5.4%. There was but slightly more difference in the rates

when the patients are divided according to sex; of the males (205) 6.8% died and of the females (195) 5.1%. A rather noteworthy observation was the low fatality rate for the colored patients (88) with 2.2% when compared with the white (312) which was 7%.

From December, 1937, to April, 1938, inclusive, there were 28 patients with encephalitis. March and April accounted for 21 of the number. This complication developed most often from the third to the fifth day of the rash and was more than twice as frequent in females (19) as in males (9). With one exception all 28 patients were white. Twelve of the 28 patients ranged in age from six to ten years. The youngest was a white girl of eight months and the eldest a white boy of 18 years. Both recovered.

There were nine deaths or a fatality rate of 32.1% for those having encephalitis. Of the fatal cases three were males and six females. Their ages were as follows: one 13 months, three five years, one six years, two seven years, one 11, and one 12 years. Among the 19 recoveries there were at least five incapacitated mentally. It is possible there were several others whose deficiencies will be permanent.

At the Municipal Contagious Disease Hospital there were 92 patients with measles during 1938. Most of these were admitted for scarlet fever and developed measles as a result of exposure prior to admission or acquired measles as a cross infection. None of the scarlet fever patients with measles had encephalitis. However, there were four measles patients admitted with encephalitis. A boy of six and a girl seven years old were admitted in January, and a girl of six and a boy of seven entered in March. The seven-year-old boy died. This group added to the County Hospital patients makes 32 instances of encephalitis with ten deaths, a fatality rate of 31.2%.

In 1933 Peterman and Fox reported 13 cases of measles encephalitis and stated their series included the largest number of cases observed during one epidemic year (1931-32). One of their patients was seen in 1931 and nine in 1932 within a period of three months. The mortality for the complete series was 43%. Ages of the 13 cases ranged from 13 months to eight years. There were nine boys and four girls. Only one girl died. It is notable in my series that the complication was present in reverse order re-

specting sex. As mentioned previously, we had more than twice as many girls as boys with encephalitis. There were also twice as many female deaths.

Among 13,156 hospital patients, Gunn of London mentions only five cases of measles encephalitis, one of which died. He states this complication usually bears no relation to severity of the disease and occurs from seven to ten days after the commencement of primary disease.

Until the causative organism of measles is definitely established and generally accepted without question, there is not likely to be any diminution of periodic epidemics. Human convalescent measles serum is the only reliable remedy for checking outbreaks in hospitals and institutions. It is also valuable for prevention when used in the home to protect delicate children or those ill from other diseases when exposed to measles. Under such circumstances, it should be administered intramuscularly in doses of 5 cc. to 10 cc. The injection should be made within three days of the date of exposure. Protection lasts from two to three weeks as a rule.

Immune globulin is not as reliable as convalescent serum for complete protection. It may be used when convalescent serum is not available and may be given in 2 cc. doses intramuscularly on two occasions; the first injection within three days of exposure and the second injection five days later. Reactions sometimes follow its use. As with convalescent measles serum immunization is only temporary.

For modification either convalescent serum or immune globulin may be employed late in the incubative period. This plan is not satisfactory ordinarily in a hospital because the modified disease is contagious and susceptibles may develop severe attacks. In the home it is logical to resort to modification for healthy children in order that they may become permanently immune to measles.

Convalescent measles serum has also been used as a therapeutic agent in the preeruptive stage of measles. Good results have been reported for the method when large doses (50 cc. or more) were used. Gunn treated seven patients in this manner in 1934. He used from 10 cc. to 30 cc. and believed results were beneficial. Kohn, Klein and Schwartz also have treated patients in this way. Levinson and Connor have done likewise. None of the series 7, 24

and 19 cases, respectively, is sufficiently large to determine any real merit the method may have. We have used amidopyrine for the treatment of measles during a good many years at the Cook County Hospital and continue to do so. We have never seen any evidence of ill effects from its administration and to me its value seems certain particularly when given in the preeruptive stage.

COMMENT

Extensive epidemics of measles in urban communities have their inception at two-year intervals.

Public health regulations customarily advocated for the control of measles by quarantine methods are of little or no value.

A review of 400 hospital patients with a fatality rate of 6% disclosed the following:

7% of the patients had encephalitis.

8.6% of 312 white patients had encephalitis.

1.1% of 88 colored patients had encephalitis.

67.8% of 28 encephalitis patients were females.

66.8% of 19 female encephalitis patients died.

32.1% of 28 encephalitis patients were males.

33.3% of nine male encephalitis patients died.

75% of all encephalitis was in those over five years.

The youngest was a girl of eight months and the oldest a boy of 18 years.

32.1% of all encephalitis patients died.

The 32 patients with measles encephalitis observed in the two hospitals is the largest number ever reported in one epidemic year.

BIBLIOGRAPHY

1. Statistics for Chicago by courtesy of the Board of Health.
2. Measles, Report of the Medical Officer of Health and the School Medical Officer on the Measles Epidemic of 1933-34. London County Council, 1936. *ibid* Measles Epidemic 1935-36 London County Council, 1938.
3. Hobson, F. G.: Measles; The Conduct of a School Epidemic, *British Medical Journal*, **4046**: 171, 1938.
4. Hoyne, A. L., and Spaeth, R.: Ear Complications of Scarlet Fever, *J. Ped.* **12**: 387-297, 1938.
5. Ronaldson, G. W.: The Appendix in Measles, *Lancet*, **1**: 278, 1937.
6. Peterman, M. G., and Fox, M. J.: Encephalitis as a Complication of Measles; A Report of 13 Cases, *Am. J. Dis. Child.*, **46**: 512, 1933.
7. Tunncliffe, R., and Hoyne, A. L.: Further Studies on a Diplococcus from Measles. Prevention of Measles by Immune Goat Serum, *Jour. Inf. Dis.*, **38**: 48, 1926.
8. Kohn, J. L.; Klein, O. F., and Schwartz, H.: Treatment of Pre-eruptive Measles with Convalescent Serum, *J. A. M. A.*, **111**: 236, 1938.
9. Levinson, S. O., and Connor, J. A.: The Treatment of Acute Measles with Human Convalescent Serum, *Journ. Ped.*, **14**: 268, 1939.

10. Stimson, P. M.: Common Contagious Diseases, Lea and Febiger, Philadelphia, 2nd Edition, 159, 1936.

DISCUSSION

Gerald M. Cline, Bloomington: Any program in the United States and especially in the State of Illinois on contagious diseases would not be complete without the leadership of our dear friend, Dr. Hoyne, who has just given us an excellent résumé on the measles setup, especially in Chicago, during the year 1938.

Glancing over his paper a few days ago, there were three outstanding points, before his statistical report was given, that I thought were worthy of bringing out again. First, that the *incidence* of measles is so greatly influenced by the *birth rate* scale that about every other year a huge epidemic of measles appears.

Second, his point of controlling the contacts rather than placarding the active cases is the paramount issue to me in his whole paper. We are all willing to admit that in the past, with our present system of quarantining plus the use of convalescent serum and immune globulin, we still are faced with the incidence rate every other year. Realizing that Dr. Hoyne's idea of control is a somewhat general belief throughout the country, can we not hope then for a change in the near future from the placarding system of our active cases to the contacts?

Third, the point he brings out about the average measles case being *safer at home*, of course, is a time-proven thought because in the first place, when the epidemic is large, no hospitals could handle them. Also the disease is usually self-limited and rather mild in type, and financially the average populace could not afford hospitalization.

I am sure that we as pediatricians and general practitioners certainly agree with this idea of his.

After reading Dr. Hoyne's statistical report of Chicago, it occurred to me that it might be quite interesting to compare this to what we have in our own city of Bloomington, a town of about 35,000. My figures do not compose any cases of Normal, Illinois, or in the rural communities. The similarity along several lines is quite interesting.

First of all, in Bloomington the measles epidemic of 1938 started early in November, as it did in Chicago. In November we had 14 cases, in December 117 cases, in January 801 (and this was the peak), in February 476, March 82, and by April we were back to the normal rate of seven cases. In Chicago, however, the epidemic hung on much longer throughout the summer and it was August before they came to their normal rate again. The total shows that Bloomington in 1938 had 1,386 compared to 37,831 in Chicago. The big month in Bloomington was January with 801 cases. March, perhaps, was the big month in Chicago.

Dr. Hoyne's report of the two hospitals shows there were 32 cases of encephalitis in Chicago. In our city we had three cases with one death. I did not go into the ages, race, etc., among our cases, but percentage speaking we had about the same incidence per month, the same number of cases of encephalitis and the same death rate.

Personally I saw two of the encephalitis cases; one died the next day after I saw it and, conscientiously,

I have to be quite critical of the method of management previous to my being called upon this case. I wish to speak of the other case at this time because I think it is quite an interesting observation and may bring some discussion upon this subject and, if you all agree as I do, probably will be of some help in the future to some other child.

This girl was around seven years of age and one of six children in a poor home in a small city north of us. I was called in to see her when she was in a state of lethargy with a complete paralysis of her lower extremities, including her bladder. The history shows that she had her first rash January 18 and on the 21st she had a headache; on the 22nd she developed her signs of lethargy. On this date she was brought to me at the hospital and a diagnosis of encephalitis was made. The spinal fluid picture showed a clear fluid with a two plus globulin and a cell count of 230, mostly lymphocytes.

Learning of her large family, who were mostly all convalescing from measles, it occurred to me that a pooled blood serum given intravenously might be of some help. Therefore, I drove up to this little girl's home that evening and drew off in one container about 200 cc. of blood in total from four different donors. This blood, of course, was tested for Wassermann and Kahn reactions, the serum separated, and the next morning it was well diluted in 500 cc. of 10% glucose and given by the slow drop method intravenously, using adrenalin in the solution. One and one-half hours later she had quite a serum reaction with chills and hives.

Her temperature dropped to normal that night, which was the 23rd, and remained practically at that range. The next day, the 24th, she began to become oriented mentally and had some feeling in her lower extremities. On the 27th, three days later, she was greatly improved and had no neck rigidity. On the 29th, which was six days after the administration of the serum, she had full powers of her urinary bladder and was also quite able to extend and flex her lower extremities as she wished. She went along and had a very uneventful recovery and has remained well ever since.

I am calling your attention to the pooled serum, which I think all authorities agree would be better than that from an individual donor. Also remember that all of the donors were just recovering from measles. Giving the serum intravenously, as I have learned from Dr. Hoyne on previous occasions, with the slow drop method is seemingly quite a harmless procedure, particularly when adrenalin is at hand. Of course, I am willing to admit that atopic reactions still can be of importance, but with the hazards against us as strongly as they were, it seems to me any fairly safe method is worthy of note.

It must be kept in mind, however, that a great many other patients with encephalitis have recovered by themselves without any therapy. The other case of encephalitis in our city that did end in recovery was of much shorter duration and severity and had no specific therapy.

I am quite sure if we had more time this subject

alone would make a very interesting half hour's discussion among us all.

My experience with convalescent serum in the prevention of and the alleviation of the disease dates back to 1920, when I had the great pleasure and privilege of taking special work at the Durand Contagious Hospital under Dr. George Weaver. At that time we made some statistical observations, but I have been unable to unearth these findings.

I am reminded, however, of a patient I saw a good many years ago in consultation who was a little boy, three or four years of age, with a virulent bronchial pneumonia secondary to measles. He was violently sick, had a high temperature, and was of much concern to his doctor and parents as to the possibility of life. His father was the superintendent of a Boys' Home and in this home they had a number of active and convalescent cases of measles. Therefore, we decided to draw blood from two of the convalescent cases and we gave this child a large dose of serum. To everyone's great satisfaction the temperature immediately dropped and the chest went through its normal stage of resolution.

Throughout my private practice I have used convalescent serum on several occasions, just as I did in this case and when I could not get convalescent serum I have used whole blood. I do agree that serum, particularly when pooled, is of much more value than the whole blood from some adult member of the family.

Twelve years ago I used convalescent serum on my own three-year-old daughter eight days after exposure and produced a very mild abortive measles which has apparently produced an active immunity.

With this particular epidemic in Bloomington in 1938, we were naturally interested in the immune globulin idea and, therefore, my following statistics, I think, will be of interest to us all.

We gave 47 individual cases immune globulin in our private practice. In four cases it was given two days after exposure. They became quite sick, had elevation of temperatures ranging up to 104, but had a quick recovery.

Three cases were given this treatment three days after exposure. Two of these had no measles and one case was very light.

Forty cases were given the globulin four to six days after exposure; in three there was high fever, extensive rashes and apparently no relief. Nineteen cases had a slight cold, very mild rash, very little fever, and showed a very definite relief.

Four cases had no rash at all. Fourteen cases had questionable relief but had no complications and had a rapid recovery.

Our total, therefore, will be—in Series A: 7 cases given immune globulin two to three days after exposure; two out of seven had no measles, one very light, and four were severe cases.

In Series B: four to six days after exposure immune globulin was used as an abortive procedure; there were 40 cases. Three had no relief; 14 were quite questionable. Four of them had absolutely no rash at all; and 19 of them were greatly relieved, showing that we had 23 out of 40 when it was used as an abortive

procedure who were greatly relieved or a percentage well above 50. The reactions were nil.

My record of each child shows that I personally know every father and mother and have contacted them since the giving of the serum and none of them has anything but good to say for this procedure. They were perfectly willing to pay me a reasonable fee for the giving of it.

From my limited experience, therefore, and comparatively speaking as to larger clinical experience, I will say that from a private practice standpoint I am perfectly willing to go ahead and use immune globulin among my best class of patients as well as the poorer class and would want it used upon a child of mine. I would, however, prefer, as Dr. Hoyne has brought out, convalescent serum.

25 E. Washington St.

THE TREATMENT OF BURNS

CHARLES L. PATTON, M.D., F.A.C.S.

SPRINGFIELD, ILL.

When the secretary asked me to prepare a paper upon the treatment of burns, I was rather skeptical as to the manner in which it would be received, since the literature is replete with recent articles covering this subject. It seemed a trite topic, but when one realizes that, despite an almost standardized method of treatment, many severe burns come to the hospital for care, covered with oils, greases and ointments, with no effort at sterilization and in a marked degree of shock, it seems probable that a review of some of the recent literature may be of value.

Some wag has facetiously remarked that if an author appropriates the work of another writer he is guilty of plagiarism, but if he takes the work of three individuals, he is engaged in research. This is my apology and defense.

Prior to the work of Davidson,¹ in 1925, many types of treatment were employed in the management of burns. These methods fell into one of four classes: 1. Treatment by oils or greases to exclude the air from the burned surfaces; 2. wet dressings of normal saline, sodium bicarbonate or other lotion, to soften the charred tissues and dilute the toxins; 3. paraffin sprays to splint and protect the injured parts, and 4. continuous baths. While the fixation treatment and continuous bath were steps forward from the days of Carron oil and Unguentine, little progress was made until Davidson advocated the use of tannic acid as a coagulant dressing. Montgomery² quotes Williams and Kuhn³ as report-

ing 1,200 cases of industrial burns, treated prior to 1925, in which 47 different methods were employed. Since Davidson, these methods have been generally discarded in favor of the use of some form of coagulant. Many variations from the original technic of Davidson have been employed, but the principles laid down by him have not been altered. Paul DeKruif,⁴ in a series of essays entitled "Why Keep Them Alive?" in a dramatic manner has portrayed the interesting and exciting facts that led up to the use of tannic acid in the treatment of burns.

Davidson based his treatment upon the theory that the toxemia in severe burns was the result of the absorption of the products of protein autolysis from the burned tissues. By the formation of a coagulum over the burned area, from the devitalized tissues and tissue juices, he hoped to prevent this absorption and thus overcome the overwhelming poisoning which was often seen in extensive burns. It is still debatable whether the so-called toxemia is caused by the absorption of histamine-like substances formed from the burned tissues or by the broken down proteins from the destruction of the skin itself, or whether it is due to an absorption of toxins produced by the bacteria present in these wounds. The latter view is held by many who have attempted to prevent the formation of bacterial toxins by the destructive action of various dyes.

Davidson reasoned that the formation of a coagulum, by precipitating the proteins, would fix any toxic agent which might be formed, in the burned tissue. To accomplish this he treated the burned area with wet dressings of 2.5% tannic acid, forming an albumin tannate. Montgomery, in 1929, suggested and employed a spray, rather than using wet dressings and used a somewhat stronger solution. Later, in 1935, Bettman⁵ suggested the use of a 10% solution of silver nitrate, after spraying the surface with tannic acid, to form a more rapid coagulum and to aid in the sterilization of the burned surfaces. In 1932, Aldrich⁶ read a paper in Boston on "The Role of Infection in Burns," which dealt with the use of gentian violet. This was used by spraying a 1% solution upon the burned area. He also employed a gel in a water soluble base, in treating ambulant patients and in minor burns. His mortality and morbidity was about the same as that reported by Davidson. In 1937 Branch,⁷ of Detroit, used a combination of gentian violet spray and a silver nitrate swab, thus

producing a rapid coagulation, which the gentian violet alone failed to accomplish.

The action of the coagulum not only fixes the toxins in the burned tissues, as suggested by Davidson, but it also diminishes fluid exudation, relieves pain and retards bacterial growth.

A patient suffering from a severe burn, regardless of the depth or the causative agent, presents a serious problem. Not only do we have to deal with the tissue changes in the local lesion, but with a serious systemic reaction. Management of these cases must take into consideration: 1. Treatment of shock; 2. Relief of pain; 3. Avoidance or correction of anhydremia; 4. Prevention of sepsis; and 5. Prevention of contractions and scars.

Theoretic consideration of the cause of shock and the mechanism of the systemic disturbance resulting in toxemia will not be considered. This has been discussed at length in a recent article by Wilson, MacGregor and Stewart,⁸ with a review of the literature upon the subject.

As a rule, any burn admitted to a hospital for treatment is of sufficient extent and severity to require most careful management. Practically all of these patients are in some degree of shock. Many features enter into the production of primary shock: pain, fear, apprehension, absorption of toxic products and fluid loss are all factors.

Pain should be immediately controlled with sufficient sedation to give the individual comfort and to permit the surgeon to make necessary manipulations in cleansing the burned area. Morphine or morphine combined with scopolamine will usually suffice, but it is often necessary to induce light anesthesia with some form of inhalation narcosis.

Intravenous saline, glucose or acacia should be administered in adequate amounts to restore or maintain a proper fluid balance. The loss of fluids by exudation may reach surprisingly large volumes in a short while. Underhill⁹ has shown that this loss may amount to 70% of the total blood volume in 24 hours. Cases have been observed by him in which the hemoglobin has reached a concentration of 200% as a result of this loss. A concentration of 125% is dangerous and should be met with the parenteral administration of fluids. Blood plasma or whole blood remains in circulation longer than infusions of glucose or acacia. Blood transfusion is rarely indicated as a primary procedure, but

it may become necessary at a later time to raise the serum protein or to correct anemia.

A considerable number of patients enter the hospital who have been given first aid by members of the family, well-intentioned friends or badly instructed first aid teams. This treatment usually consists of the application of oils, greases or ointments, with no attention to asepsis or antisepsis. These messy applications interfere greatly with the proper care of the burn and should be carefully removed with some non-irritating solvent, such as benzene or ether.

All devitalized skin, covering blebs and all loose burned tissue should be gently removed. The involved area is then cleansed with a neutral soap and water on cotton pledgets. Green soap is too irritating to use for this purpose. After the area is dried, by means of cotton or a mechanical drier, it is sprayed with a 5% solution of freshly prepared tannic acid. If no other coagulant is used, spraying is repeated at intervals of fifteen minutes until a thorough tanning is obtained. If, after the first application of tannic acid, a 10% solution of silver nitrate is applied with cotton pledgets a firm, brownish-black covering is produced. This covering is adequate and is more pliable than that produced by frequent applications of tannic acid alone. Silver nitrate also has a definite bactericidal effect, acting upon all types of organisms.

Gentian violet, acrid-violet, brilliant green and other dyes are often used, producing a mild coagulation but having a definite bactericidal effect upon gram positive organisms. The principal objection to the use of dyes is their staining property, which raises havoc with hospital linens. The result obtained from the use of tannic acid and silver nitrate compare favorably with those from the use of dyes.

After preliminary debridement, cleansing and tanning, the lesions are left exposed to the air and require no dressings. The patient is placed in bed, on sterile linen and covered by a heat frame, with temperature maintained at 95 to 100 degrees Fahrenheit. The patient must be watched carefully for any evidence of dehydration and glucose must be administered in sufficient quantities to maintain water balance. Balance may be rather accurately determined by the urinary output.

Ointments or gels of tannic acid may be used around the body orifices and in skin folds. The tanning effect of these preparations is not as

great as that of water solutions, but the crust formed is more pliable and shows less tendency to crack, thus minimizing the chance of infection. Tannic acid has not proven efficacious in severely contaminated burns. Moist saline dressings and cleansing with a non-irritating soap should be used in these cases. If infection is imminent, the aniline dyes have proven successful.

The crust, after this form of treatment, shows some tendency to separate in 8 to 10 days. As the tanned tissue curls at the edges of the wound it should be removed with scissors. It should not be soaked or macerated with watery solutions, since the softening of the crust is often followed by an increase of absorption of the toxic products in the crust. If separation is delayed, the tissue should be removed by sharp dissection. The crusts should be watched for the appearance of blebs of retained serum or infectious material. If this occurs, the crust should be removed from the infected area and the underlying part treated with moist saline dressings. Skin grafting should be employed early in those areas showing no tendency to epithelialize. The extremities should be carefully observed and measures applied to prevent flexion deformities. Deformities and contractions from scar should be remedied by plastic surgery. Only one familiar with plastic surgery should attempt these corrections.

Drs. Karl Meyer and Lester Wilkey¹⁰ have recently compared the results of the use of various coagulants and antiseptics in the treatment of burns and they have quite convincingly shown that the results of treatment depended more upon the principles involved in Davidson's work, and upon the care with which they are employed, than in the character of the drug used. They attempt to evaluate the various treatments as used at the Cook County Hospital in a series of 968 cases between the years 1933 and 1937. They have arrived at the following conclusions: The Bettman tannic acid-silver nitrate treatment is the treatment of choice in severe burns, not contaminated or infected, especially if the patient is seen in less than 12 hours after the burn occurred. The aniline dye treatment has been successful where infection is imminent. In severely contaminated burns, moist dressings and cleansing with white soap and water is the treatment of choice.

Standardization of any procedure is difficult in

a general hospital with an open service. The acceptance of new methods is slow, and long after the efficacy of any measure is proven, a large number of the visiting physicians fail to employ them. This is particularly true of the treatment of burns, since these cases are usually not referred to surgeons but are cared for by the general practitioner, who sees relatively few burns in the course of a year. No attempt has been made in our hospitals to have these cases treated by teams, proficient in the handling of such cases.

It is difficult to evaluate statistics in such a hospital, since records are often incomplete and it is frequently impossible to judge of the extent or character of the burn from the written record. However, it is apparent that within the last few years practically all burns treated in the Springfield hospitals have been cared for by the use of some form of coagulant, either employing tannic acid, aniline dyes or picric acid. It is also apparent that the death and morbidity rate has fallen remarkably in these years.

It is rather astonishing that in hospitals comprising 700 beds, in a community that boasts of its share of industrial activity, particularly in the coal mining field, that there have been treated in these hospitals but 202 burns in the years 1935 to 1939. There were 25 deaths, 7 of which occurred within the first 24 hours and 5 within 48 hours. The other deaths occurred from the third to the fifteenth day. It is interesting to observe that in the last year there have been treated 50 cases with but 2 deaths.

DISCUSSION

Dr. H. B. Blocksom, Jr., Rockford: I would like to ask Dr. Patton what he does with an old infected burn in which the fluid balance is not in question, but an area the size of the back of the leg is badly chronically infected with the usual organisms, such as staphylococcus, and whether he would apply hot wet dressings or whether he would use coagulants first.

Dr. Charles L. Patton, Springfield (closing): It is very definitely contraindicated to use a coagulant. I think such a burn should be thoroughly cleansed and treated with moist dressings and as soon as a surface is available, skin grafting should be done.

BIBLIOGRAPHY

1. Davidson, E. C.: Tannic Acid in the Treatment of Burns. *S. G. & O.*, 41: 202, 1925.
2. Montgomery, A. H.: The Treatment of Burns. *Industrial Med.*, 6: 639, 1937.
3. Williams and Kuhn: Quoted by Montgomery.
4. DeKruif, Paul: Why Keep Them Alive.
5. Bettman, A. G.: Tannic Acid-Silver Nitrate Treatment of Burns. *Northwest. Med.*, 34: 46, 1935.

6. Aldrich, R. H.: The Role of Infection in Burns. *New Eng. J. Med.*, 108: 299, 1933.
7. Branch, H. E.: Extensive Burns. *Arch. Surg.*, 35: 478, 1937.
8. Wilson, MacGregor and Stewart: The Clinical Course and Pathology of Burns and Scalds under Modern Methods of Treatment. *Brit. Jour. Surg.*, 25: 826, 1938.
9. Underhill, F. P.: Changes in Blood Concentration with Special Reference to the Treatment of Superficial Burns. *Ann. of Surg.*, 86: 840, 1927.
10. Meyer, Karl A., and Wilkey, J. L.: Treatment of Burns, etc. *Minnesota Med.*, 21: 644, 1938.

THE EARLY DIAGNOSIS AND TREATMENT OF POLIOMYELITIS WITH POLIOMYELITIS ANTISTREPTOCOCCIC SERUM

EDWARD C. ROSENOW, M. D.

Division of Experimental Bacteriology, The Mayo Foundation,
ROCHESTER, MINNESOTA

It is my purpose to review very briefly the more important results obtained in studies on the relation of the streptococcus to poliomyelitis, and to show how these studies have culminated in a simple diagnostic skin test¹ and in an effective treatment of poliomyelitis with poliomyelitis antistreptococcic serum.²⁻⁵ The need for an effective antiserum which can be prepared in adequate amounts is very great. Convalescent serum cannot solve the problem because poliomyelitis would have to continue to exist in virulent form with its dire consequences to insure a supply. The streptococcus first isolated in 1916 from the nasopharynx, brain and spinal cord and demonstrated in the lesions⁶⁻¹¹ has since been consistently isolated from the nasopharynx, brain and spinal cord of persons who succumbed to poliomyelitis in each of fourteen epidemics which I have studied, and from the brain and spinal cord (virus) of 511 monkeys that succumbed to inoculations with 128 different strains of poliomyelitis virus.

The incidence of isolation of the streptococcus was highest in those cases in which animals died or were anesthetized when in the acute stage of the disease. Thus cultures in dextrose brain broth made in the usual way yielded the streptococcus in 180, or 80 per cent., of 224 instances in which monkeys that subsequently had paralysis, died, or were anesthetized within ten days following inoculation of filtered or emulsified virus. In another series in which the serial dilution method¹² was used, the streptococcus

Read before the Aux Plaines Branch of the Chicago Medical Society, September 23, 1938.

was isolated from the spinal cord of 162, or 89 per cent., of 181 monkeys that had poliomyelitis. About 33 per cent. of numerous filtrates of the virus yielded the streptococcus almost always in pure culture. A close parallelism was found between viability of the streptococcus and the virus on prolonged preservation in 50 per cent. glycerol. By a special staining method¹³ small, light diplococci, sometimes in chains of two or three, were found in filtrates of active virus and in filtrates of old cultures of the streptococcus in autoclaved chick mash medium.

The streptococcus was consistently demonstrated by microscopic examination of the sediment of the spinal fluid and by cultures in dextrose brain broth in the early stages of the disease in human beings and monkeys.^{3, 14} In monkeys it was proved absent in the spinal fluid before intracerebral or intranasal inoculation of virus and during the period of incubation, but was proved present concomitantly with the onset of symptoms and then disappeared as symptoms progressed and advanced paralysis or death occurred.

The streptococci isolated from the brain and spinal cord in instances of the spontaneous disease among human beings and in instances of the experimental (virus) disease among monkeys were identical or similar culturally and morphologically, in virulence and in immunologic characteristics. They produced flaccid paralysis in guinea-pigs, rabbits and monkeys.¹⁵ They had, on isolation, identical "neurotropic" distribution curves of cataphoretic velocity.¹⁶ They were agglutinated crosswise by the serum of horses that had been hyperimmunized with these respective strains. During the acute stage of the disease the serums of persons and monkeys were shown to contain streptococcic antigen,¹ and during convalescence they contained specific antibodies alike for the virus and the streptococcus.¹⁷⁻¹⁹ Intradermal injections of suitable suspensions of the heat-killed streptococcus proved to be a test of susceptibility to poliomyelitis.²⁰ Several subcutaneous vaccinations of reactors (susceptible persons) with heat-killed streptococci caused the reactivity of the skin to disappear (immunity) just as occurred in all cases in which persons were tested during and following attacks of poliomyelitis.

By the use of a medium consisting of infantile tissue in which acid is not produced by the

growth of streptococci (autoclaved chick mash), a transmissible filtrable virus has been produced from streptococci.⁸ These experiments fulfilled a most important requirement for proof of causal relationship of the streptococcus to poliomyelitis. The details of the methods used in these etiologic studies, full references to published work and the reasons for certain discrepancies in results and viewpoint will be published shortly.

A DIAGNOSTIC SKIN TEST FOR POLIOMYELITIS

Intradermal injection of approximately 0.05 cc. of a 10 per cent. solution, in physiologic saline solution, of the euglobulin fraction of the antistreptococcic serum prepared from horses was found to elicit an immediate (ten minutes) erythematous-edematous reaction in patients suffering from a disease caused by streptococci immunologically identical or closely related to the streptococci used in preparation of the reacting serum.^{21, 22} An erythematous reaction 2 cm. or more in diameter or approximately 3 sq. cm. or more in area to the poliomyelitis antistreptococcus euglobulin, no reaction or a lesser reaction to other antistreptococcic euglobulins and no reaction to normal horse serum diluted 1:10 are considered diagnostic of "poliomyelitic" infection. These together with suggestive symptoms indicate that therapeutic injections of the serum should be given at once. This test is an application to streptococcic diseases of the Foshay antibody-antigen reaction first noted in cases of tularemia.²³ By using the euglobulin or bacterial antibody fraction of the antistreptococcic serum the test serves to determine whether a given patient is suffering from a streptococcic infection and, if so, what particular type and what anti-serum or stock vaccine had best be used therapeutically.²¹ A summary of the results obtained in cases of acute epidemic poliomyelitis, in groups of well persons who served as controls, in cases of chronic poliomyelitis, amyotrophic lateral sclerosis, chronic encephalitis, chronic infectious arthritis or ulcerative colitis, with the euglobulin obtained from the serum of horses that had been immunized to streptococci isolated respectively in studies of epidemic poliomyelitis, encephalitis, arthritis, and ulcerative colitis and normal horse serum are summarized in table 1.

The incidence of reactions 3 sq. cm. or more and maximal average reaction to the poliomyelitis euglobulin was highest during the acute

TABLE 1

Erythematous reaction following intradermal injection of the euglobulin fraction of the serum of horses that had been hyperimmunized to streptococci

Average reaction in sq. cm. to the euglobulin of the serum of horses immunized to streptococci from

		Epidemic poliomyelitis					Normal horse serum 1:10
		Percentage of in- stances in which the size of the reaction					
Groups	Persons	Average was 3 sq. cm. reaction	or more*	Encephalitis	Arthritis	Ulcerative colitis	
Epidemic poliomyelitis—							
Acute (1-9 days).....	26	9.8	92	2.8	2.4	3.0	0.4
Convalescent (10-39 days).....	39	4.1	44	..	5.9	1.6	0.5
Abortive (1-9 days).....	16	7.3	81	..	3.9	..	0.8
Well persons; 2 to 4 weeks after exposure to polio- myelitis	52	1.0	19	..	1.3	1.8	0.5
Adults remote from epidemic poliomyelitis.....	51	1.3	12	..	5.3	..	0.7
Rural school children—							
Within zone of mild epidemic of poliomyelitis....	60	1.6	27	..	..	..	..
Remote from poliomyelitis.....	53	1.3	15	..	..	..	..
Chronic poliomyelitis	30	7.9	80	2.2	2.5	3.6	0.3
Amyotrophic lateral sclerosis.....	19	8.2	63	3.9	1.4	..	0.2
Chronic encephalitis	92	3.0	32	6.0	3.0	3.0	0
Chronic infectious arthritis.....	43	2.5	25	2.5	7.9	2.9	0.9
Ulcerative colitis	13	3.0	21	5.0	5.0	10.0	1.0

*Percentages are given to the nearest whole number.

stage of epidemic poliomyelitis (92 and 81 per cent., 9.8 and 7.3 sq. cm.), next highest during convalescence (44 per cent. and 4.1 sq. cm.), lower among person who had been exposed to poliomyelitis two to four weeks before (19 per cent.) and among well children within the epidemic zone (27 per cent.), and lowest among adults (12 per cent.) and children (15 per cent.) who were remote from an epidemic of poliomyelitis. These results have been corroborated independently in as yet unpublished observations made during a major epidemic of poliomyelitis which occurred in 1937.

The incidence and degree of reaction among persons afflicted with chronic poliomyelitis and amyotrophic lateral sclerosis were also much higher (80 and 63 per cent., 7.9 and 8.2 sq. cm.) following like injection of euglobulin obtained from the other antisera—encephalitis (32 per cent. and 3 sq. cm.), chronic infectious arthritis (25 per cent. and 2.5 sq. cm.) and ulcerative colitis (21 per cent. and 3.0 sq. cm.). Moreover in each group of persons having encephalitis, chronic arthritis or ulcerative colitis maximal reaction occurred with the euglobulin obtained from the respective homologous antisera. In other words, each of these antisera when injected intradermally had diagnostic value. The antiserum with which the results

summarized in the table were obtained, was prepared with streptococci isolated in studies of the epidemic in Los Angeles in 1934. The cases of acute poliomyelitis occurred in four widely separated outbreaks. Four different batches of antisera were used and the results were comparable. However, not all patients tested reacted equally to the different antisera. Young children with typical attacks usually had the greatest reaction following injection of the antiserum prepared with streptococci obtained from typical acute anterior poliomyelitis (Heine-Medin disease), and older children or young adults with atypical or bulbar symptoms had the greatest reaction following injection of the antiserum prepared with streptococci obtained in cases of atypical poliomyelitis in the Los Angeles epidemic of 1934.

Therapeutic injection, once or twice daily, of the 10 per cent. solution of the euglobulin to which the cutaneous reaction is positive, or a mixture of the euglobulin and pseudo-globulin in like concentration in 5 cc. amounts for children five years or less of age, and of an additional 1 cc. at each injection for each additional year of age up to twenty years for one or two days in the "prepoliomyelitis" stage and for two to four days in the "paralytic" stage usually caused the results of the skin test to become

negative and resulted in recovery without paralysis. Like injection for four to six days of the reacting euglobulin in cases of paralysis usually caused the results of the skin test to become negative and seemingly had therapeutic value in checking paralysis, especially in the early stages. In mild cases in which the patients had not received the poliomyelitis antistreptococcic serum or had been given one large injection of convalescent serum, the results of the skin test became negative first in from ten to fourteen days, while in severe cases, especially those in which the patients continued to be peevish, to have slight fever, and to have little or no return of muscular function, the results of the skin test often remained positive for two to four weeks.

THE PROTECTION OF MONKEYS AGAINST
EXPERIMENTAL POLIOMYELITIS

Many of the monkeys that had atypical attacks of poliomyelitis following injection of the freshly isolated streptococci and that were immunized with the living streptococci became immune to intracerebral inoculation of virus.³ In a new series of experiments in which great precautions were taken in the isolation and in the preservation of the specificity of the streptococcus from which the vaccine was prepared and in inoculating highly virulent virus intranasally instead of intracerebrally, it was possible to obtain a high degree of protection by methods applicable to human beings.⁷ Moreover, by using this method of inoculation in which the usual route of infection in human beings, as now understood, was closely simulated, it was possible uniformly to neutralize the virus with the poliomyelitis antistreptococcic serum.^{3, 7} In our studies we injected the different batches of fresh streptococcic antiserum used in the treatment of this disease into human beings throughout many years, intravenously or intramuscularly into monkeys after intracerebral inoculation of virus, with many failures but with success in a significant number of experiments.³ Altogether only thirty-six, or 40 per cent. of ninety-one monkeys that received the serum intravenously or intramuscularly before and after onset of symptoms following intracerebral inoculation of highly virulent virus died from poliomyelitis. In contrast, twenty-one, or 78 per cent., of twenty-seven monkeys treated in like manner with normal horse serum died of poliomyelitis.

THE TREATMENT OF POLIOMYELITIS OF HUMAN
BEINGS WITH POLIOMYELITIC ANTISTREPTOCOCCIC
SERUM

Results of the treatment of epidemic poliomyelitis with the streptococcic antiserum prepared from the horse or its euglobulin fraction, have been reported from time to time. A summary of all cases in which this treatment has been used thus far, in large part according to the condition of the patient at the time of the first injection of serum and in regard to the outcome as regards death and residual paralysis, is given in table 2.

TABLE 2
Results of treatment of acute poliomyelitis with poliomyelitis antistreptococcic serum

Condition of patient at the time of first injection of serum	Total number of cases	Deaths		Cases in which follow-up data were available		Severe residual paralysis	
		Num- ber	Per cent*	Num- ber	Num- ber	Per cent*	
No paralysis	387	10	3	351	7	2	
Slight paralysis	231	16	7	196	3	2	
Moderate paralysis	257	20	8	225	10	4	
Severe paralysis	661	118	18	521	124	24	
Total number of cases, irrespective of condi- tion of patient at the time serum was first administered	2445	202	8	1566	180	11	
Cases in which serum was not administered.	2377	493	21	429	154	36	

*Percentages are given to the nearest whole number.

The patients who were treated represented those observed in many different epidemics in widely separated localities, including one epidemic in the tropics. All patients receiving serum, no matter whether dying at the time of the first injection and regardless of the amount injected, were included. The results when compared with control cases in which serum was not used were consistently favorable in every epidemic studied. The mortality and incidence of residual paralysis, the two most important factors in this disease, were always lower in cases in which the serum was administered, and if the serum was given in the early stages of the disease, they were much lower, often tenfold lower, than they were in the cases in which serum was not administered. Only those cases in which there was no reasonable doubt of the correctness of the diagnosis were included. The favorable results according to the early administration of the serum treatment are well shown in table 2.

The earlier the serum treatment was begun, the more favorable were the results. Thus the mortality (3 per cent.) and incidence of severe residual paralysis (2 per cent.) were lowest in the group of cases in which the serum treatment was begun in the preparalytic stage. They were about the same (7 and 2 per cent. respectively) in the group of cases in which slight paralysis was present, somewhat higher (8 and 4 per cent. respectively) in the group of cases in which there was moderate paralysis, and then rose abruptly to 18 and 24 per cent. respectively in the group of cases in which severe paralysis was present at the time of the first injection of serum. It is a deplorable fact that the group of patients who had severe paralysis at the time of the first serum treatment was proportionately so large (661 of a total of 1436 cases in which the condition at the time of the first serum injection was recorded). At that, the mortality in the 2445 cases in which serum was administered was only 8 per cent. and the incidence of severe residual paralysis was 11 per cent. in the 1566 cases in which this fact was ascertained, in contrast to a mortality of 21 per cent. in 2377 cases in which serum was not employed in the same epidemics, and in contrast to the incidence of severe residual paralysis in 36 per cent. of 429 cases in which follow-up data were obtained in the control group.

This statistical evidence for the curative action of the serum is in accord with the good effects noted at the bedside. Restless nervous children often fell asleep soon after the first injection of serum. Headache, and pain in the involved extremity or part were often lessened or relieved. The temperature curve usually often dropped rapidly to normal after an initial rise. Progressing paralysis was often seemingly arrested. Restoration of muscle function was also seemingly more rapid than it was in cases in which serum was not administered. Favorable effects were noted in all of the epidemics studied. Results comparable to these have been obtained, in an as yet unpublished work, during a major epidemic of poliomyelitis in 1937 and have been reported in widely separated epidemics by Rowan,²⁴ Sugg,²⁵ Clarke and Dow²⁶, and Moody and Hesselberg.²⁷

SUMMARY

Studies made by special methods indicate causal relationship of the streptococcus to epi-

demic poliomyelitis. Poliomyelitis antistreptococcic serum affords a simple method for the early diagnosis of poliomyelitis. The results from the use of this serum in the treatment of poliomyelitis in a period of twenty-two years have been uniformly encouraging.

REFERENCES

1. Rosenow, E. C.: Precipitin and cutaneous streptococcal antibody-antigen reactions in poliomyelitis, *Proc. Staff Meet., Mayo Clin.* 12: 531-535, 1937.
2. Rosenow, E. C.: Report on the treatment of fifty-eight cases of epidemic poliomyelitis with immune horse serum, *J. Infect. Dis.* 22: 379-426, 1918.
3. Rosenow, E. C.: Poliomyelitis antistreptococcus serum; further studies on the bacteriology and serum treatment of poliomyelitis, *J. A. M. A.* 94: 777-784, 1930.
4. Rosenow, E. C., and Nickel, A. C.: Treatment of acute poliomyelitis with poliomyelitis antistreptococcus serum; results from 1921 to 1925, *Am. J. Dis. Child.* 33: 27-49, 1927.
5. Rosenow, E. C.; South, Lillian H., and McCormack, A. T.: Bacteriologic and serologic studies in the epidemic of poliomyelitis in Kentucky, 1935, *Kentucky M. J.* 35: 437-446, 1937.
6. Rosenow, E. C.; Towne, E. B., and Wheeler, G. W.: The etiology of epidemic poliomyelitis; preliminary note, *J. A. M. A.* 67: 1202-1205, 1916.
7. Rosenow, E. C.: Protection of monkeys (*Macacus rhesus*) against experimental poliomyelitis with vaccine and antiserum prepared with the streptococcus from poliomyelitis; preliminary report, *Proc. Staff Meet., Mayo Clin.* 13: 328-330, 1938.
8. Rosenow, E. C.: The relation of streptococci to the viruses of poliomyelitis and encephalitis; preliminary report, *Proc. Staff Meet., Mayo Clin.* 10: 410-414, 1935.
9. Mathers, George: Some bacteriologic observations on epidemic poliomyelitis, *J. A. M. A.* 67: 1019, 1916.
10. Hektoen, Ludvig; Mathers, George, and Jackson, Lella: Microscopic demonstration of cocci in the central nervous system in epidemic poliomyelitis, *J. Infect. Dis.* 22: 89-94, 1918.
11. Nuzum, J. W., and Herzog, Maximilian: Experimental studies on the etiology of acute epidemic poliomyelitis, *J. A. M. A.* 67: 1205-1208, 1916.
12. Rosenow, E. C.: Isolation of bacteria from virus and phage by a serial dilution method, *Arch. Path.* 26: 70-76, 1938.
13. Rosenow, E. C.: A method of staining microorganisms and their capsular substance; its application to streptococci and to filtrates of the viruses and spinal fluids in poliomyelitis and encephalitis, *Proc. Staff Meet., Mayo Clin.* 10: 115-121, 1935.
14. Rosenow, E. C.: Streptococci in the spinal fluid of experimental poliomyelitis in monkeys, *J. Bact.* 19: 27-28, 1930.
15. Rosenow, E. C.; Towne, E. B., and v. Hess, C. L.: The elective localization of streptococci from epidemic poliomyelitis, *J. Infect. Dis.* 22: 313-344, 1918.
16. Rosenow, E. C.: An institutional outbreak of poliomyelitis apparently due to a streptococcus in milk, *J. Infect. Dis.* 50: 377-425, 1932.
17. Rosenow, E. C., and Gray, Hazel: Agglutination of the pleomorphic streptococcus isolated from epidemic poliomyelitis by immune serum, *J. Infect. Dis.* 22: 345-378, 1918.
18. Mathers, George, and Tunncliffe, Ruth: A reaction of immunity in acute poliomyelitis, *J. A. M. A.* 67: 1935-1936, 1916.
19. Rosenow, E. C.: A specific reaction of convalescent serum on the streptococcus isolated in studies of poliomyelitis, *J. Immunol.* 23: 455-464, 1932.
20. Rosenow, E. C.: Further observations on a skin test for susceptibility to poliomyelitis, (*Abstr.*) *Am. J. Path.* 7: 546, 1931.
21. Heilman, F. R., and Rosenow, E. C.: Newer methods of study and treatment of chronic streptococcal disease, *Proc. Staff Meet., Mayo Clin.* 12: 252-256, 1937.

22. Rosenow, E. C.: Specificity of streptococci isolated in studies of diseases of the nervous system; experimental reproduction of persistent sneezing and convulsions, *J. Nerv. and Ment. Dis.* 81: 138-160, 1935.

23. Foshay, Lee: Intradermal antiserum tests; bacterial-specific response not dependent upon serum sensitization but often confused with it, *J. Allergy.* 6: 360-364, 1935.

24. Rowan, J. J., Jr.: Serum treatment of epidemic poliomyelitis occurring in Dubuque, Iowa, during the summer of 1918, *Med. Rec.* 96: 972-974, 1919.

25. Sugg, H. R.: Report of thirty-seven cases of acute poliomyelitis treated with Rosenow's serum, *J. Iowa M. Soc.* 15: 573-577, 1925.

26. Clarke, Floyd, and Dow, A. G.: Rosenow's serum in the prevention of paralysis in anterior poliomyelitis, *J. A. M. A.* 83: 421-423, 1924.

27. Moody, E., and Hesselberg, C.: Poliomyelitis antistreptococcic serum; and results in a small epidemic, *J. Pediat.* 51: 11-22, 1934.

THE HOSPITAL MANAGEMENT OF TUBERCULOSIS IN THE PSYCHOTIC

S. A. LEADER, M. D.

Veterans Administration Facility
Now at Lexington, Ky.

NORTH CHICAGO

The occurrence of pulmonary tuberculosis in the psychotic has long been recognized as a serious problem. Statistics on mortality from tuberculosis in mental hospitals were collected as far back as 1876 and 1877 in Germany by Heiman, Ostwald and Zinn. Subsequent investigators in various countries have published detailed reports on practically all phases of the subject except treatment which has received comparatively very little mention. Although collapse therapy in the treatment of pulmonary tuberculosis has been widely publicized and extensively used, particularly in the last decade, not a single report could be found by the writer in a careful search of literature dealing with the application of this method to tuberculosis in the psychotic. It is perhaps to be expected that the use of such therapy in the psychotic would lag behind its application in the nonpsychotic. It may be stated here, however, that despite the absence of published accounts, various forms of collapse therapy are now being used.

At the suggestion of the Medical Director, Veterans Administration, a study of the feasibility of applying the various forms of collapse therapy in pulmonary tuberculosis associated with mental disorders, incorporating other phases of the whole problem as well, was carried out at the Veterans Administration Facility, North Chi-

cago, Illinois. An analysis was made of all the deaths at North Chicago from March, 1936, when the hospital was opened, until December 31, 1937. The total patient population (1,152) as of January 1, 1938, was classified according to the various psychoses and as to active and inactive pulmonary tuberculosis. These results were tabulated as were statistics derived from a survey of the literature for comparison.² Through the kind cooperation of Dr. Dombrowski of the Chicago State Hospital, Dr. Reed of the Elgin State Hospital, and Dr. Pollak of the Peoria State Hospital (Director, Municipal Tuberculosis Sanitarium, Peoria, Illinois) pertinent data were obtained from their respective institutions.

There was considerable variation in these statistics. The differences are based on a great many factors such as the type of patient admitted, location of hospital, percentage of autopsies, available laboratory facilities, and different interpretations of the various functional psychoses; to attempt to analyze these factors is beyond the scope of this paper. In general, however, the majority of the reports agree on the following: 1. The death rate from tuberculosis is greater in psychotics than in the general population. 2. The greatest incidence of tuberculosis in the psychotic is in the dementia praecox group, as is the greatest death rate from tuberculosis. 3. The incidence of tuberculosis as well as the death rate from tuberculosis increases with the duration of hospitalization. In this regard Löw made the interesting observation in his series of 536 autopsies, including 166 cases of dementia praecox, that just as many patients who had been hospitalized as long as or longer than those with tuberculosis and were just as deteriorated did not develop tuberculosis. In the series at North Chicago similar findings were noted. As to why this should be, no opinion is ventured. It should be remembered that a considerable number of normal contacts also fail to develop active pulmonary tuberculosis. This may indicate that the factors of individual resistance and quantity or exposure to infection play a role.

DIAGNOSIS

In view of the diagnostic problems inherent in tuberculosis in non-psychotics, it is not surprising that the difficulties of detecting tuberculosis in the psychotics have been repeatedly empha-

Published with permission of the Medical Director, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the author.

2. For brevity, only part of this data is appended on pages 13, 14, and 15.

sized. The following is a brief résumé of the important factors in diagnosis:

(A) Symptoms: Such symptoms as cough, expectoration, loss of weight, and fever are frequently absent in the psychotic; they may be deceptive when present. For example, loss of weight occurs often and low grade fever occasionally without any demonstrable physical ailment. Tachycardia is common in disturbed patients. Yet, when the above symptoms do appear and persist, tuberculosis must be ruled out. (This implies keeping a weight chart of all patients and pulse and temperature records as indicated.) Hemoptysis is the most reliable single symptom when definitely established.

(B) Physical Findings: These are frequently absent in tuberculosis even in the presence of cavitation. The task of eliciting positive signs in non-cooperative patients is often hopeless. When persistent crepitant rales and frank evidence of cavitation are present, however, they are obviously of diagnostic value.

(C) X-ray: The role of the x-ray in the diagnosis of tuberculosis is undisputed, but a single illustration is quite pertinent. Malmros and Wessel in their series of 696 autopsies in which the cause of death was pulmonary tuberculosis in 190 cases, found 76 patients in whom the tuberculosis was discovered only at postmortem; during this period only isolated x-ray examinations were done because the hospital had no x-ray facilities; but when these same investigators examined 1,060 patients by the use of the portable fluoroscope and had films made, 44 cases of active tuberculosis and 62 of inactive, all previously unrecognized, were revealed.

(D) Laboratory Examinations: The finding of the tubercle bacilli in the sputum, gastric contents, or pleural fluid by direct smear, culture, or animal inoculation, is obviously conclusive. Examination of the gastric contents for tubercle bacilli is particularly valuable in psychotics as sputum is often unobtainable.

(E) Tuberculin Test: Inasmuch as the percentage of positive tuberculin reactions is high above the age of thirty particularly in institutionalized psychotics and increases with the duration of hospitalization, the test is of service chiefly in the younger age groups and in surveys among newly admitted patients. In the Veterans Administration where the age group is well above forty, the tuberculin test would appear to be of

little service in uncovering new cases, but a negative test (except in moribund patients) is a great help in ruling out tuberculosis.

(F) Erythrocyte Sedimentation Test: Although some investigators place a good deal of reliance on these tests as a diagnostic and prognostic aid in tuberculosis, Malmros and Wessel obtained contradictory results in applying the test to the psychotics. In the small group examined at North Chicago by this means, little additional information was supplied.

TREATMENT

As stated previously, the subject of treatment has not received the consideration that it should. Even with the improved facilities now available for the diagnosis and treatment of tuberculosis and the decrease in tuberculosis mortality in the general population, the mortality from tuberculosis in the psychotic has changed comparatively little, particularly in the dementia praecox group. This demonstrates that the previous methods of treating tuberculous psychotics, namely, rest and general hygiene, were not adequate.

Treatment will be discussed briefly under: 1. Prophylaxis; 2. General hygienic measures, including heliotherapy; 3. Symptomatic; 4. Gold preparation; 5. Treatment of general paresis in the tuberculous; 6. Occupational therapy; 7. Collapse therapy; 8. Tuberculous complications.

1. Prophylaxis: The foundation of any drive against pulmonary tuberculosis consists in locating and isolating the active cases. Earlier and more frequent recognition of the disease has resulted from the extensive surveys with the tuberculin test, and x-ray carried out on the general public and already used in a considerable number of mental hospitals. Continued and more widespread use of these methods may be expected to cause a decrease in the incidence and mortality from tuberculosis in mental hospitals.

2. General hygienic measures, including heliotherapy: The usual measures of rest, fresh air, sunshine, adequate food, including vitamins (especially D and C) and minerals, form the basic treatment of all pulmonary tuberculosis and necessarily of tuberculosis in the psychotic. Adequate diet must be particularly stressed because many psychotic patients have to be urged constantly to eat and even require forcible feeding. In laryngeal tuberculosis tube feeding is to be avoided if possible. Attempts to apply bed

rest at times also meet with considerable opposition. This may be overcome by the use of mild sedatives such as bromides and paraldehyde. (At North Chicago hydrotherapy is used only in inactive tuberculosis.)

The ultra-violet ray and sunshine are of particular importance in tuberculosis of the glands, bones and joints, of which there appear to be comparatively few in the Veterans Administration. Ultra-violet irradiation is the procedure of choice in mental hospitals. The usual precautions against using such therapy in hemorrhagic cases must be observed.

3. Symptomatic: There is no essential difference in the psychotic and non-psychotic, but at times it is difficult to induce a disturbed psychotic patient to accept any medication.

4. Gold preparations: There is still a marked difference of opinion as to the efficacy of gold therapy in tuberculosis since it was first introduced by Mollgard. If gold preparations are indicated at all, the same indications would hold in the tuberculous psychotic.

5. Treatment of general paresis in the tuberculous: This controversial subject may be briefly summed up by stating that antiluetic treatment should be given (consisting of tryparsamide and bismuth preparations), but the dosage particularly of the tryparsamide should be decreased. Potassium iodid should preferably not be used at all, although Fishberg and other authors have held that iodides are not harmful to the healed fibroid lesion. While the danger may not be great, every now and then a flare-up of an inactive tuberculosis occurs in a paretic who has been treated with potassium iodid. Fever therapy and malaria should be reserved for the well-healed cases with little residual lung involvement.

6. Occupational therapy: During the active stages of the disease there is little opportunity for occupational therapy, but after the disease has become quiescent, and graduated exercise has been instituted, light work of various types while the patient is still within the ward would appear to be of benefit. Of course, later, when the disease is completely arrested, patients should be permitted suitable light projects, such as weaving, basket making, and woodwork, in the various occupational therapy facilities of the institution. Further efforts in this regard would be advantageous, although in 1927 Kidner had already called attention to the possibilities.

7. Collapse therapy: Under collapse therapy, the following questions require consideration: 1. Is it worth while to apply this procedure at all to psychotics? 2. If minor or major surgery is applicable in psychotic patients, why may not chest surgery be used in this type of patient?

In answering the first question, it is well recognized that an appreciable number of psychotic patients, even in the hebephrenic praecox group recover, if not permanently, at least for a sufficiently long time to be able to get along on the outside. Many more are able to make a very satisfactory hospital adjustment, which involves carrying out more or less complicated assignments with very little supervision.

As regards the second question, major operative procedures such as gastroenterostomy, appendectomy, and rib re-sections have been performed without hesitancy in emergencies; in addition, such operations of convenience as herniotomy, tonsillectomy, and gall-bladder drainage have been carried out at North Chicago as well as elsewhere. Loeb, of the Veterans Administration, Augusta, Georgia, has also called attention to these facts and has employed surgical procedures successfully in selected epileptics; yet some of the boldest advocates of collapse therapy shrink from performing such a simple procedure as a phrenic nerve block on a psychotic individual. Fortunately, this attitude is slowly changing.

Seaman of the Winnebago State Hospital, Wisconsin, states that there is little variation in the requirements for collapse therapy in the psychotic. In Wisconsin all of the active psychotics with tuberculosis are transferred to special institutions, such as the hospital at Douglas County, which undoubtedly facilitates the application of collapse therapy. Reed of the Elgin State Hospital reports only pneumothorax feasible. The patients at this institution are seen by a consultant from a general tuberculosis sanitarium. Dombrowski of Chicago State finds excellent results from pneumothorax, using both unilateral and bilateral procedures. The surgical consultant does the phrenic nerve operations and even thoracoplasties. Pollak at Peoria State Hospital (Municipal Tuberculosis Sanitarium, Peoria, Illinois) writes that he has selected a group of patients for pneumothorax and phrenicectomy.

As an instance of what may be accomplished even in disturbed patients, the following is of

interest: A hebephrenic dementia praecox, who developed an empyema, was treated successfully by aspiration and closed drainage for about two months, although during this period of treatment he was frequently disturbed and noisy. Several months later his mental condition had improved sufficiently so that he was able to leave the hospital on a trial visit and he is still out of the hospital at this writing.

Artificial pneumothorax was tried in three other cases. The patients cooperated excellently but unfortunately no free pleural space could be established. The third patient died of progressive tuberculosis.

The chief objection to pneumothorax in the less cooperative patients is that it requires frequent repetition and yet the empyema case just cited indicates what may be accomplished even in the disturbed group.

At present there are no reports available concerning the use of intrapleural and extrapleural pneumolysis, pneumoperitoneum, oleothorax, scaleniotomy, or intercostal neurectomy, in the psychotics, but the writer sees no reason why in selected cases the ordinary indications for these procedures cannot be employed.

From the foregoing it may be seen that: 1. Major surgical procedures can be done successfully in the psychotic. 2. Artificial pneumothorax and phrenic nerve operations are definitely feasible in the psychotic, and 3. Even an occasional thoracoplasty has been done. The usual indications for these procedures can be employed, but each case will have to be considered individually from the mental and tuberculosis standpoint. Artificial pneumothorax as in the non-psychotic is particularly indicated in pulmonary hemorrhage where the site of the hemorrhage can be located. In the Veterans Administration owing to the fact that the average age of the patients is well beyond forty and that this age is constantly increasing, as a result of which the degenerative diseases of advancing years may be expected, it is not believed that thoracoplasty will be found applicable very frequently; yet in selected cases even this operation is possible. Phrenic nerve interruption being the simplest procedure is perhaps the operation of choice in a disturbed patient who would otherwise be suitable for pneumothorax.

8. Tuberculous complications: Space permits but brief reference to the treatment of complications. In the first place, when the disease of

the lungs is effectively controlled, it has been observed that complications diminish in frequency and severity. There are at present no reports available on the treatment of tuberculous complications in the psychotic. In general the treatment of such complications as intestinal tuberculosis, laryngeal, urogenital, bone and joint, glandular tuberculosis and tuberculous empyema will conform to that employed in the non-psychotic, but each case will have to be considered individually from the mental standpoint. Certainly such urgent conditions as spontaneous pneumothorax will require immediate relief.

It might be well to consider briefly the best type of facilities that should be used in the treatment of the tuberculous psychotics. There are three main possibilities: (A) In a tuberculosis ward of a mental hospital. The disadvantage involved here is the fact that there is not an active collapse therapy service because of the small number of patients. This objection has been obviated by the use of consultants from tuberculosis sanatoria. In the Veterans Administration the cases selected for phrenic nerve operations and for thoracoplasty are sent to chest surgery centers. (B) In a separate mental ward of a tuberculosis hospital. This has the obvious advantage of having readily available the personnel of a large active tuberculosis service. The location of such a ward to prevent disturbance of the non-psychotic patients is a problem that probably could be overcome. (C) In a hospital built specifically for tuberculous psychotics. This method has functioned successfully in Wisconsin. As far as the Veterans Administration is concerned, the expense involved in concentrating tuberculous psychotic patients from various sections of the country in several hospitals would be excessive, so that such patients are treated in tuberculosis wards of neuropsychiatric hospitals.

TABLE 1
Mortality statistics at North Chicago classified according to psychosis and to tuberculosis:

Diagnosis	1926-1931		1932-1937	
	T.B.		T.B.	
Dementia Praecox	46	21 45.65%	43	17 37.53%
General Paresis	42	4 9.5 %	79	1 1.4 %
Manic-depressive Psychosis. 1 ..			4	..
Epilepsy	1	..	7	..
Mental Deficiency	2	..	0	..
Huntington's Chorea	2	..	6	1 16.66%
Encephalitis, lethargic	3	..	7	..
Multiple Sclerosis	1	..	2	..
Alcoholic	1	..	4	1 25 %
Cerebral Arteriosclerosis ..	3	..	12	..
Senile	0	..	5	..
Brain Tumor	2	..	1	..

Diagnosis	1926-1931				1932-1937			
	T.B.				T.B.			
Toxic	1	1	100	%	2	2	100	%
C. N. S. Lues.....	0	..			3	..		
Chronic Encephalitis	0	..			1	..		
Psychosis with cardio								
vascula	0	..			1	..		
Involutional Melancholia ..	0	..			1	..		
Totals	104	26	25	%	178	22	12.37	%
Autopsies	37				65			

Three diagnoses listed as toxic are included only for comparison as they occurred in tuberculosis patients who were in the hospital for only a short time before death. The percentage of autopsies was not great but where no autopsy was done the diagnosis of tuberculosis was substantiated by x-ray, sputum examinations, or both. Since late in 1930 all new admissions have had routine chest x-rays. It is felt, therefore, that there were few unrecognized deaths from tuberculosis.

TABLE 2-A

Total mortality from tuberculosis in various mental hospitals:

Author	Country	Time	% of Deaths from T.B.
Ganther	Germany	1880-1904	19.8
Geist	Germany	1894-1903	10.5
Ostwald	Germany	1877-1891	25.1
Ostwald	Germany	1896-1906	6.5
Heiman	Germany	1870-1897	16.6
Löw	Germany	1911-1916	24.69
Sands	U. S. A.	1910-1918	13.61
Silk	U. S. A.	1910-1916	11.5
Pollak	U. S. A.	1920-1938	10.0
McGhie and Brink	Canada	1928-1932	8.61
Göransson	Sweden	1929	29.8
Malmros and Wessel	Sweden	1919-1933	26.2
Bogen, Tietz and Grace	U. S. A.	1933*	0.7
Dombrowski	U. S. A.	1937	4.3

*Reported merely as "few years preceding this date."

TABLE 2-B

Mortality from Tuberculosis in the principal psychoses:

Author	Country	D. Precoc					Senile	
		%	%	%	%	%	%	%
Schroeder	Germany	67					12	
Löw	Germany	50.6	32	27.18	6.9	6.3		
Ganter	Germany	45	10	21.8	7.3	8.3		
Malmros and Wessel	Sweden	43.8	15.5	29.4	16.7	9.3		

TABLE 3

Incidence of tuberculosis in North Chicago and other mental hospitals:

Name of Hospital	Year	Total Patients	Total T.B.	% of T.B.
Veterans Administration Hospital, North Chicago, Illinois	1937	1,152	16†	1.39
			36†	3.12
Government Hospital, Washington, D. C.	1917	3,274	84	2.6
General Survey,* U.S.A.		188,000	6,000	3.2
Longview Hospital, Cincinnati, Ohio	1933	2,275	68	3.0
Chicago State Hospital, Chicago, Illinois	1937	4,795	68	1.41
Elgin State Hospital, Elgin, Illinois	1937	4,730	80†	1.67
			80†	1.67

*Based on statistics, by Klopp, from hospitals throughout the United States.

†Active.

‡Inactive.

SUMMARY

1. The mortality from tuberculosis in psychotics is significant; although there are pronounced variations in statistics, the death rate is higher in mental hospitals than in the general population.

2. The highest incidence of as well as the highest death rate from tuberculosis occurs in the dementia praecox group.

3. The death rate and incidence from tuberculosis increase with the duration of hospitalization.

4. In the past the majority of the cases of pulmonary tuberculosis have been far advanced when recognized; however, by applying case finding methods similar to those used in tuberculosis surveys many more early cases have been discovered.

As more work is carried out along these lines, further decrease in the incidence and mortality of tuberculosis in the psychotic can be expected.

5. Although symptoms of tuberculosis in the psychotic are frequently absent and unreliable when they do occur, when loss of weight (determined by weight charts) or persistent fever occurs, tuberculosis must be ruled out. Hemoptysis when present is a valuable symptom.

6. Physical findings are difficult to obtain and as in the non-psychotic are not always reliable when absent.

7. The x-ray, including the fluoroscope, is the most reliable method of diagnosis.

8. Examination of the gastric contents by smear, animal inoculation, or culture, is a valuable diagnostic adjunct, because often sputum is not obtainable.

9. Tuberculin tests are of value chiefly in the younger age groups. In the Veterans Administration their chief advantage is when negative in ruling out tuberculosis.

10. Treatment, as in tuberculosis in the non-psychotic, includes: (a) Recognition and isolation of the active cases; (b) The usual hygienic measures, including diet; (c) Symptomatic measures; and finally (d) Collapse therapy is applicable to the tuberculous psychotic, with phrenic interruption being the first, pneumothorax the second choice.

The writer wishes to acknowledge his appreciation to the hospital authorities for their cooperation in this study. Other sources have been acknowledged in the body of this report.

BIBLIOGRAPHY

Bogen, E.; Tietz, E. B., and Grace, Major F.: Tuberculosis and Mental Disease, *Am. Rev. TB.* 30: 351, 1934.

Briau: Quelques aspects de la probleme de la Tuberculose dans les Asiles d'Alienes. Arch. Intern. Neurolog. 52: 395 et 529, 1933. 55: 11 et 165, 1934.

Fishberg, M.: Pulmonary Tuberculosis, 2: 202, 1932.

Gullbring, Alf and Levin, Nils: The Importance of Gastric Lavage for the Demonstration of Tubercle Bacilli in Adults, Acta Med. Scand. Forlag, Stockholm. 93: fasc. 1-11, 1937.

Hilleboe, H. E.: Comparative Study of Tuberculosis among Insane Persons, Lancet, 57: 150, 1937.

Kidner, T. B.: Occupations for the Tuberculosis Insane, Psychiatric Quart. 1: 344, 1927.

Klopp, H. I.: The Care of Tuberculosis Patients in Mental Hospitals, Am. J. Psychiatry, 6: 641, 1927.

Liebermeister, G.: Tuberculose und Psychosen Arch. F. Psychiat. und Nervenkrank. Berlin, 70: 58, 1923.

Loeb, William A.: Report of Round Table Conference of Vet. Adm. of T. B. Physicians, 1936 p. 12.

Loewenstein, E. and Kopeloff, N. B.: Tuberculosis in Psychotic Patients, Psychiatric Quart. 8: 72, 1934.

Löw, H.: Über Tuberkulose in Irrenanstalten, Allg. Ztschr. F. Psychiat. und Psych-Gricht. Med. Berlin, 63: 443, 1917.

McGhie, B. T., and Brink, G. C.: A Tuberculosis Survey in Mental Hospitals, Am. J. Psychiatry, 90: 975, 1934.

Malmros, H., and Wessel, Nils: The Occurrence of Tuberculosis among Patients and Staff at one of our big Mental Hospitals, Acta pschiat. and Neurolog. 11: 819, 1936-37.

Sands, I. J.: Pulmonary Tuberculosis and Insanity, N. Y. Med. Jour. 109: 103, 1919.

Seaman, G. E.: Diagnosis and Treatment of Tuberculosis in Psychotics, Report of Round Table Conference of Vet. Adm. of T. B. Physicians, 1937, p. 41.

Seibert, F. B.; Aronson, J. D.; Reichel, J.; Clark, L. T., and Long, E. R.: Purified Protein Derivative, Supplement Am. Rev. T. B. 30: p. 707, 1934.

Silk, S. A.: The Psychical Changes Observed in Pulmonary Tuberculosis and its Relation to Insanity, Med. Record 92: 969, 1917.

Stadnichenko, A. and Cohen, Seymour J.: Gastric Lavage as a means of Demonstrating Tubercle Bacilli in Pulmonary Tuberculosis, Proc. Nat. T. B. Assn., June 1, 1937.

Tripper, Bert: Clinical Observations of Pulmonary Tuberculosis as seen among the Deteriorated Psychotic, U. S. Vet. Bur. Med. Bull. 2: 572, 1926.

THE DIFFERENTIAL DIAGNOSIS OF CHRONIC ABDOMINAL DISEASE

HERBERT PAYNE MILLER, M. D., F. A. C. S.

ROCK ISLAND, ILLINOIS

The differential diagnosis of chronic abdominal conditions may be easy or may be extremely difficult. The completely typical case is more often the exception than the rule. The scope of this study is to relate the impressions received of the confusing abdominal conditions encountered in a series of 900 personally made and treated clinical examinations. All cases in this series were submitted to complete routine examination, and exhaustive examinations were made where the problem of diagnosis was obscure. The final diagnosis was often reached only after continued observation and study of response to treatment.

Analysis of the records revealed that organic

disease of the gall-bladder, stomach, duodenum, appendix and colon required careful differentiation from functional disturbances and anomalies of the gastrointestinal tract. Remote causes such as constitutional disease with abdominal symptoms, referred pains as in spinal arthritis and disease of the central nervous system, the genito-urinary tract, the female pelvic organs cover in general the other confusing conditions met with.

History—The gall-bladder patient is usually a somewhat obese female, about 45, complaining of chronic indigestion with post-prandial distress, belching and bloating after meals. The history of typhoid is rare in our series. Idiosyncrasy to fats, greasy or fried foods is common. Colic and jaundice if present are characteristic. The symptoms may occur with a normal dye test. One is then forced to look outside the gall-bladder for an explanation as in the following case:

Case 1: Mrs. C. H., aged 37, housewife, seen 6-6-34. Entrance Complaint: Pain in the right upper abdomen, bowel cramps, nervousness. Present Illness: Trouble began ten years ago with attacks of dull pain in the right upper quadrant. No food ease, no periodicity. Belching and "gas" in the abdomen. Passed mucous with abdominal cramps on several occasions. Examination: Nervous appearing, normal in weight. Liver down two fingers on the right and the lower pole of the right kidney readily felt. X-ray Examination: Right sided ptosis of colon, liver and kidney. Gall-bladder normal. Irritable colon demonstrated by barium meal.

The diagnosis was psychoneurosis, generalized visceroptosis and irritable colon. Eight years ago, elsewhere, she was treated for peptic ulcer; four years ago she was advised to have the gall-bladder removed and three years ago a famous midwestern clinic advised an exploratory operation. Certainly surgery is not indicated on our diagnosis.

The ulcer patients met with were usually younger than the gall-bladder patients, male, and if not young the history went back into early adult life. The story of a good appetite, hunger pains, food ease and alkali relief is typical. Hemorrhage or tarry stools are characteristic, but many times were absent in the history. Irritable colon or anomalies of the colon can mimic the whole picture.

The story of recurrent attacks of pain in the right lower quadrant of a few days' duration with soreness outlasting the pain, attended by vomiting, constipation and slight fever with leucocytosis is considered as characteristic of acute appendicitis. The whole syndrome may be produced by a low cecum as in Case 2:

Case 2: Mr. F. S., aged 51, farmer, seen 3-16-36. Entrance Complaint: Pain in the right lower abdomen; joint stiffness; exhaustion. Present Illness: Always

constipated unless takes medicine. When bowels do not move there is a constant feeling of distress in the right lower abdomen as though gas couldn't pass through. Feels bloated and tender during these acute flareups and has been advised to have the appendix out when seen by various physicians during one of these spells. Examination: Tenderness in the right lower quadrant in the region of appendix with a feeling of doughiness. X-ray Examination: Very low mobile cecum present, could be displaced to the mid-line.

In this case the elongated right colon with free mesentery permitted attacks of stasis either due to mechanical kinking or spasm with production of attacks of "acute appendicitis" until relieved by thorough irrigation of the colon as described by Bastedo.¹ If an appendectomy is done these patients continue to have their attacks after operation. Colon anomalies may imitate gastric, appendiceal, ulcerous, or obstructive syndromes. Differential diagnosis depends on exclusion by x-ray.

Carcinoma of the proximal colon as in the following case may be mistaken for appendicitis.

Case 3: Mrs. J. B., aged 33, clerk, seen 10-24-33. Entrance Complaint: Pain in the right lower abdomen. Present Illness: Indigestion and gas on stomach for six months. Two weeks ago because of pain, tenderness, and a mass the size of an orange a physician treated her for appendicitis, with ice bag and bed rest, with subsidence in one week. In the past week another attack occurred. Examination: temperature 99.2; hemoglobin (D) 75%; leucocytes 9,200; red cells 4,200,000 per cubic millimeter. X-ray Examination: Barium enema showed a filling defect in the lower ascending colon. Operation revealed a constricting carcinoma of the ascending colon with partial obstruction.

Functional disturbances of the colon contribute in a large measure to confusion in diagnosis. The irritable colon may be single or may complicate organic disease and may be responsible for the symptoms rather than the organic disease. The individual suffering with a functionally deranged colon is usually of slender visceroptotic habitus, under weight, in poor posture, often a female with multiplicity of nervous symptoms.

Abdominally, there is usually a history of constipation with persistent use of cathartics. Shifting pains are present. In the lower right quadrant they suggest appendicitis, if in the left upper quadrant the heart or if in the right upper quadrant the gall-bladder and duodenum may be thought of. The stools are usually mushy, ball or pencil like, in short pieces, not formed and sausage shaped. Mucus may have been noted. Tenderness is present over the course of the colon. Gas, belching, hyperacidity, distress after meals occurs and is often relieved by passing of flatus, defecation or enema. Symptoms are aggravated by strain or emotional excitement and relieved by rest or a vacation.

Considering now remote, referred, genito-urinary and pelvic states as causing abdominal symptoms, spinal arthritis may simulate gall bladder on a referred pain basis as in case 4:

Case 4: Mrs. J. V. M., aged 63, housewife, seen in 1930. Treated for chronic osteo-arthritis of spine, fingers, knees since 1930. Appendectomy performed in 1935. At that time the gall-bladder was explored and found normal. In 1937 noted sharp, sticking right upper quadrant pains which radiated around to the back accompanied by belching, bloating after meals and nausea. Examination showed slight tenderness over the gall-bladder area. She was under nervous strain due to care of sick husband. X-ray Examination: Showed a normal gall-bladder series. Lateral films of dorsal and cervical spine showed marked osteo-arthritis. The gastric symptoms were due to irritable colon and the pains due to neuritis. She was relieved by physical therapy and antirheumatic drugs.

Disease of the central nervous system is represented by one case of tabes with gastric crises. For pain in the right upper quadrant operation for gall-bladder disease has been advised elsewhere. Pictures with the dye were normal. On further observation the pains shifted to the right leg as lightening pains.

Considering the various historical indications, then, it is seen confusion can easily occur. The first duty is to differentiate the functional from the organic type of trouble not forgetting we may have both together or that organic disease may be the means of precipitating a functional nervous condition.

Physical Examination—The physical examination may reveal a tender ropy colon in the left iliac region, tenderness over the gall-bladder area (which may be due to the colon), the boggy cecum, the mass of malignancy, the epigastric or right upper quadrant tenderness of peptic ulcer or the obstructed ptotic kidney. Operative scars are significant in exclusion. Of the other solid organs besides the liver, the spleen has not entered into the picture once in this series. The kidney was frequently found down on the right in visceroptosis and may be significant in right lower quadrant pain as in the following case.

Case 5: Mrs. J. K. Mc., aged 27, housewife, seen 10-4-33. Entrance Complaint: Pain in the right side of the abdomen. Present Illness: For three years spells of pain in the right lower abdomen which radiated slightly to the thigh, accompanied by nausea, aggravated by prolonged standing. Spells would last two to three days and be relieved for two or three days. Physical Examination: Moderate tenderness in the region of McBurney's point. X-ray Examination: Appendix negative. Retrograde pyelography: Distention of the pelvis reproduced patient's pain. Film showed nephrop-tosis on the right with a tortuous, kinked ureter. Relieved by an abdominal support and gain in weight.

The general posture if collapsed and the

condition of the spine for flexibility should be observed. Cystadenomata and retention cysts of the right ovary often simulate appendiceal involvement but are ruled out by pelvic examination. The diseased uterus usually causes little confusion because of pelvic symptoms or menstrual abnormality and can usually be excluded by pelvic examination except in the very obese.

Laboratory—The sedimentation rate is usually definitely elevated in chronic gall-bladder, renal and malignant conditions provided acute respiratory infections, pathological changes in the lung, pelvic disease and menstruation are ruled out. Recurrent appendicitis, irritable colon, and anomalies alter it but little. The red picture may be altered in ulcer or malignancy; the white cells or Schilling count are of little assistance in chronic states. A slightly elevated icterus index in a doubtful gall-bladder case may help sway the weight of opinion. The Kahn test is routine. Gastric analysis is only of slight value. Duodenal drainage with findings of white cells and cholesterol crystals is of definite confirmatory value in gall-bladder disease. The gross stool examination as to shape and consistency has already been mentioned. Urinary findings of pus may help to differentiate the infected ptotic kidneys from the appendix when on the right.

X-ray—The normal appendix visualizes as the cecum fills and empties. The normal filling time is four hours. It should empty in 24 hours. Criteria of involvement are tenderness, lack of filling, fixation, kinking, persistent filling. An unvisualized appendix may be due to retained feces in right sided colon stasis or may be concealed due to retrocecal position. If abnormal, tenderness will be felt in the region of the appendix, the lack of filling being due to thickened wall, stricture or fibrosis. Associated spasm of the cecum may be present. The position of the diseased appendix where it is high as in undescended cecum may cause it to simulate a gall-bladder or kidney condition also if the tip extends high retroceally. One left sided appendix was found in our series.

Case 6: Miss B. B., aged 20, student nurse, seen 4-9-37. Present illness: Has had several attacks of pain and soreness in the left lower quadrant accompanied by nausea, vomiting, slight temperature and leucocytosis. X-ray Examination: Barium meal and enema demonstrated a lack of fusion of the right half

of the colon with the tender appendix and right colon swung over into the left ileac fossa, at which point the symptoms were localized. At operation this position was confirmed.

In the absence of typical deformity or niche in the cap in the patient with the duodenal ulcer syndrome, anomalies of the colon such as low cecum, hypofixation with right sided coloptosis leading to a drag on the duodenum with intermittent obstruction should be looked for. In the thin asthenic individual the ptosed dilated slow emptying stomach observed with the meal may be of clinical significance in accounting for gastric symptoms. The use of oral gall-bladder dye should be routine in most cases. If there is still confusion the intravenous pyelography is a great help in ruling out the kidney. A flat scout film of the abdomen before any other observation is a good plan in picking up vertebral or other bone disease, renal stones, radio-opaque gallstones.

CONCLUSIONS

The difficulties inherent in the differential diagnosis of chronic abdominal disease from the standpoint of screening out non-surgical conditions have been emphasized by a review of deceptive points in the history and illustrated with cases. Emphasis has been placed on recognizing certain functional and anomalous types in which surgery is not indicated. Important diagnostic points in physical examination, laboratory and x-ray examination learned from a series of 900 personally examined and treated cases have been enumerated.

BIBLIOGRAPHY

Walter A. Bastedo: Colon Irrigations, J. A. M. A., Handbook of Physical Therapy, page 443, 1932.

TULAREMIA

P. A. STEELE, M. D.

DECATUR, ILL.

In taking up the subject of tularemia, I should like to say first, that while we had a total of 29 cases reported in Decatur, Ill., from Nov. 17th to Dec. 30th, 1938, I had to run down the first seven or eight cases, after having heard of a few of them from men with whom I myself was out hunting. In other words, the physicians had not been reporting them, largely because they did not know they were reportable. After

Read before Section on Public Health and Hygiene of Illinois State Medical Society, May 3, 1939.

that start, their cooperation was excellent. In fact, they were all more than willing that I check each patient.

That being the situation in my own community, I am quite sure that some of those present have not had any experience with tularemia, and I ask the indulgence of those who are familiar with the disease, while I cover some of the main points regarding it.

In 1911 McCoy and Chapin found a disease in ground squirrels in Tulare County, California. It was found on investigation to be transmissible to other rodents, and to monkeys. Smears from various organs, especially the spleen, showed a short rod-shaped bacillus apparently encapsulated, which they named *Bacterium tularense*, in recognition of Tulare County.

From 1917 to 1920 Francis found two dozen febrile cases in Utah, which were directly related to a fatal epidemic of jack rabbits, due to the *Bacterium tularense*.

Since that time the disease, tularemia, has been found not only in this country, but in Canada, Norway, Sweden, Japan, and Russia, outbreaks having been so bad in the last named country that as many as two-thirds of an entire village have been stricken.

Over 90 per cent. of the cases in the United States have been due to skinning and cutting up rabbits. In 1932 the United States Public Health Service had 3653 cases reported, with a mortality of 4.9 per cent. I refer you to the April 15th issue of the Illinois Health Messenger for statistics in this state from 1926 to date.

The *Bacterium tularense*, or *Pasteurella tularensis* is a small pleomorphic organism measuring 0.3 to 0.7 of a micron, by 0.2 of a micron. It is so small that it will frequently pass through a Berkefeld filter. It stains best with crystal or gentian violet, and occurs in both bacillary and coccoidal forms. It is gram-negative, non-motile, and non-spore bearing. It is aerobic, and while first grown by McCoy on a coagulated egg yolk medium, the best known medium at the present time is a blood glucose cystine agar. It differs from the other *Pasteurellas* in the failure to grow on ordinary culture media. It is more invasive than *Past. pestis* in that it will apparently penetrate the unbroken skin of laboratory animals, although this is not true in human beings. It has been found in the stools of bedbugs up to 25 days, but it is killed in ten

minutes at 56°C. The meat of the cooked rabbit is, therefore, quite safe to eat. The mode of transmission in animals is by ticks.

In man, the incubation period is very short, being usually one to three days, although in two or three of our cases it was six or seven days. The onset is marked by headache, chills, fever, sometimes vomiting and almost invariably extreme prostration.

There are four types (1) Ulceroglandular, including the meningeal and pulmonary types; (2) Glandular—no primary lesion; (3) Oculoglandular in which there is a conjunctivitis, the *Bacterium* having been carried to the eye by the fingers; and (4), the typhoid type in which there is no local lesion and no glandular involvement. With the exception of two cases of the glandular type, all of ours were of the ulceroglandular type, nearly all of them giving a history of sticking a finger at the site of the lesion with a broken bone while skinning the rabbit, or, as was usually the case with those women who contracted the disease, of cutting a finger with a knife while cutting the rabbit up for cooking.

The active stage of the disease will usually last from two to three weeks, the outstanding criteria being chills at first, with fever, glandular symptoms and rather marked prostration, together with an ulcer at the site of infection. There is little or no leukocytosis. In all of the ten cases checked for it, we found a definite hyperglycemia. Relapses may be looked for even after a considerable period of time, although recovery in man is apparently followed by complete protection against reinfection. There is on record one case of a laboratory worker who recovered 18 years ago, and has since had four transient local reinfections on a finger, at different times, without any systemic disturbance.

The differential diagnosis is difficult, especially in distinction from typhoid and undulant fever. I should like to mention in that connection that serums from cases of tularemia have been found to agglutinate both *Brucella abortus* and the *Brucella melitensis*, and that serum from cases of Undulant fever may agglutinate the *Pasteurella tularensis*. The significant differential points are: (1) A history of dressing wild rabbits; (2) localized lesion and glandular swelling, nearly always involving the axillary glands, and in about half of our cases, the epi-

trochlears; (3) isolation and identification of the bacillus; and (4) agglutination of patients' serum with *Past. tularensis*.

As to the agglutination, our experience is the same as that of most others. On four of the cases we never did get a positive agglutination, two of these having died within two weeks from the onset. Of the remainder two of them were positive in the second week, and the rest in the third or fourth week. The agglutination titer in recovered cases remains for an undetermined period. Francis has never found a negative agglutination in recovered individuals.

Fatal cases are due to a rather rapidly developing septicemia, glandular enlargements, and focal necroses in lymph nodes, bone marrow, lungs and particularly in liver and spleen. We found on autopsy on two cases that there were small pale abscesses varying from the size of the head of a pin up to perhaps a half inch. The organism was successfully grown on blood glucose agar. You will note that there was no cystine in the culture media, as there was none available. Dr. T. S. Raiford, pathologist in charge of the laboratories of St. Mary's Hospital in Decatur and of laboratories in associated hospitals in other towns, was also able to grow cultures from other cases, using the spinal fluid and the blood from one patient, blood only from a second case, and direct from the local lesion in two other cases. In each instance this was before the development of a positive agglutination. The spinal fluid was obtained when a spinal puncture was done in a successful attempt to relieve the patient of the extreme headache.

As to treatment, in the three patients who died, one was treated for three days with sulfanilamide, then given symptomatic treatment, and two doses of serum intravenously; the other two cases were treated symptomatically only. As to the remaining cases, all of whom recovered, and have as yet showed no signs of a relapse, one was treated with sulfanilamide throughout; five were treated with sulfanilamide for the first few days, with no apparent result, then put on symptomatic treatment; one was given bismuth sodium tartrate, two cc. of a three per cent solution for two days; the prostration and adenopathy cleared up entirely in a week, and the physician in charge of the case claims to have used it before with equally good results; Mulford's serum was used in three cases, along with

symptomatic treatment; in four cases quinine alone was used; in one case Parke Davis haemoprotein was used; in one case prontosil in ten cc. doses was given four times a day to a beginning cyanosis, then repeated a week later, following which time there was complete recovery; three cases were treated with metaphen intravenously, and symptomatic treatment; and the remainder were given symptomatic treatment only. The only complications which developed were that one case still has an axillary adenopathy; in two cases the suppurating glands had to be lanced, and in one woman 54 yrs. of age there is a definite diabetes; she is on insulin at the present time.

In conclusion, there is still no specific treatment for tularemia.

The disease must be diagnosed clinically as the agglutination is not positive until the second or third week.

Due to the marked increase in the disease in 1938 in rabbits, we can probably look for another outbreak in the last two months of 1939.

I believe we can assume that the continued warm weather through the month of November, 1938, was largely responsible for the spread of the disease, as a definite cold spell would have killed off most of the sick rabbits. I made the suggestion to the Illinois Sportsman's Clubs that the opening of the hunting season be made a month later. Their objection to this was that it would bring about a marked increase in the shooting of pheasant and quail out of season, undoing the good work which is being done in restocking the state with those birds. It is still possible that some change may be made in hunting regulations before next fall.

DISCUSSION

Dr. Cecil A. Z. Sharp, Springfield: It is interesting to note that the doctor mentioned the fact that the blood agglutination test is not positive the first two weeks of the disease. In fact, we had a number of cases where the agglutination test did not become positive until the fifth week of the disease. It was very noticeable in our laboratory reports that large numbers of specimens were being sent in to our laboratory requesting a tularemia agglutination test and we were reporting these tests as negative. In fact, during a one-week period we had over 200 negative agglutination tests for tularemia. We felt these physicians were not sending these specimens in without some particular reason. No doubt, they suspected their patients had tularemia and wanted to confirm their diagnosis. So we made it a routine practice to

add to the bottom of each negative laboratory report a sentence which read, I believe, as follows: "Test is rarely positive until the third week of the disease." In this manner we were able to obtain second specimens subsequently on a large number of these patients which, of course, later proved to be positive. Often-times a physician would have a case that had existed for some two or three weeks and send in a specimen and obtain a negative report and then definitely rule out tularemia from this one negative report. Our figures for 1938 showed we had 459 cases of tularemia reported to the Illinois State Department of Public Health. Thirty-two of these cases terminated fatally, giving us a fatality rate of 6.9 per cent. Now, over 99 per cent. of these 459 patients gave a definite history of having handled or eaten rabbits. Out of this number, only two stated they had not handled rabbits; one had handled a squirrel and the other a quail. The onset of the illness was as short as one day in a few cases; it averaged about two or three days; and went as long as twenty-one days in another case.

It is very interesting to note that about two years ago the Illinois Department of Conservation placed a ban on the sale of wild rabbits in Illinois. It is no longer possible for the farm boy to go out and shoot wild rabbits and take them in to the country store and sell them. It is forbidden by law. And for that reason these same country boys do not bother to kill these rabbits. At the present time we have an enormous increase in the rabbit population. You can't drive five miles without seeing a number of killed rabbits on the highways today. With this great increase in the population of rabbits and their contact with each other, we have had an enormous increase in the amount of infection, or reservoir of infection, that exists in these rabbits. It will probably be necessary to release this restriction in order to have these rabbits killed off.

There is absolutely no danger in eating the rabbit. Our danger is simply in getting this blood infection into our own blood. If we use the simple precaution of strong rubber kitchen gloves when dressing or handling these rabbits, and then thoroughly cook them, it is just as safe to eat an infected rabbit as it is a healthy rabbit. Of course, no one would deliberately eat an infected rabbit. Those that are ill or appear to be ill should be shot. A number of hunters actually declared they wouldn't waste a three cent shot-gun shell on a sick rabbit. Of course, if we could get a few more of our hunters to kill these sick rabbits as they see them, it would be of great benefit in reducing the reservoir of infection.

Dr. A. J. Levy, Chicago: This year I was fortunate to have had the opportunity of studying six cases of tularemia, two of the typhoid types, and four of the ulceroglandular type. Five of the six patients were butchers by trade.

One patient, of the typhoid type, was employed at the Stockyards in Chicago. According to his story, he never came into direct contact with the carcasses of animals. His work was to hang up the hooks

from which the carcasses were suspended. For precautionary measures all hooks were handled with gloves. During his illness, which was a mild type, no glandular enlargements were observed at any time. He complained of general weakness and ran a very high temperature for several weeks. Diagnosis was made 23 days after the onset, by laboratory findings—positive agglutination 1:640. The patient recovered on treatment with sulphanilamide.

The second typhoid type patient also showed no glandular enlargement, with the exception of the spleen which was somewhat enlarged, and though the treatment was the same as for the first patient, he succumbed to the disease on the fifth week of illness.

These two cases seemed very peculiar, as neither patient had had any direct contact with animal carcasses. I wonder if Dr. Steele can explain how these patients might have contracted the disease.

Another question I would like to ask is, at what date during the course of the disease should the blood be taken for culture? I think it is very important to know this, because the agglutination does not appear to be positive until the third week, at least.

I would like to ask Dr. Sharps whether he can enlighten us as to the type of tularemia cases that terminates fatally. Are all of them of the typhoid type, or are they of different types as well?

Dr. Steele, in response: In regard to the case that gave no history at all, Dr. Levy, I can't answer anything on that. The only thing I can do is to guess at it. But probably somebody who did have tularemia had come in contact with this person. Perhaps he had an ulcer and didn't know it was tularemia at all. And the second person may have come in contact with it through a cut upon his hand, affording a mode of entry. Beyond that I wouldn't be able to give an explanation.

In regard to the blood, in which a positive blood culture was found, in two cases one was taken within four days of the onset of the disease and the other was taken, I should say, within a ten-day period. I don't remember the exact date on that. But both cases did show a positive culture before we got any agglutination. In other words, the blood was sent in for the agglutination test at the time but it wasn't until later that we did get a positive agglutination, the cultural findings preceding it.

MEDICINE AT A PINNACLE OF DISTINCTION AND EXCELLENCE

Alphonse M. Schwitalla, S. J., dean St. Louis University School of Medicine, St. Louis, Mo., says:

"Medicine in America stands today at a pinnacle of distinction and excellence. . . . As I see it, the fundamental reason why—despite its obvious failures to supply a final answer to all of life's problems—medicine has merited, and rightly, the confidence and trust of mankind is that medicine has been concerned primarily with safe-guarding not its own interests but the interest of all men."—*Wisconsin Medical Journal*, September, 1938.

TREATMENT OF COMPOUND FRACTURES

CARLO S. SCUDERI, M. D.
CHICAGO

There is nothing new in the treatment of compound fractures which I am about to present. It is probably as old as the subject of fractures, and many of the principles to be presented are the teachings of Dr. Cubbins. We have at the Cook County Hospital an opportunity of treating a large number of compound fractures, Saturday being a day of velocity and Sunday a day of debridement. We have tried almost every form of treatment, have discarded some and adopted others. The methods I present today have been most successful in our hands. We do not want to condemn any other methods. I am purely presenting our experience.

In the treatment of compound fractures we believe the first person who takes care of the case does the most important work. Most of these cases fall into the hands of persons at the site of the accident, the policeman, the fireman, or somebody who has had no training in the treatment. We do not expect to make doctors out of them, but we do believe that by radio, by newspaper publicity and by lectures they should be taught not to fool around with bones. If they are taught to cover the wound with linen and to splint the leg immediately, I think the doctor who finally takes care of the case will have better success and a better end result—cover the wound, immobilize immediately and do not manipulate at the site of accident.

We like to treat the shock first. Nothing is done until the patient is out of shock. We have permitted cases to be immobilized but not touched for as long as six or eight hours, because by trying to treat the fracture without combating shock first has led to some unhappy results. When they are out of shock we take them to the operating room. We have ceased treating these as minor cases. They are all major cases. Under anesthesia the wound is covered with sterile gauze and the extremity is thoroughly washed with soap and water for ten minutes, then shaved. Finally the wound is uncovered and is washed with soap and water. The patient is then prepared with iodine and alcohol or

whatever other antiseptic one desires. We put no antiseptic into the wound because it is Dr. Cubbins' teaching and that of other men that the addition of antiseptic destroys the tissues and the cells which are trying to combat infection and for this reason the wound does better without any antiseptic.

We have made it routine to extend the compound area surgically, making a wide exposure, so that all tissues can be seen. Some of the worst cases we have had have been simple puncture wounds. They have flared up with terrific infection because we were afraid to cut the skin. Heretofore one of our greatest mistakes was removal of the skin edges around the compound fracture, perhaps $\frac{1}{16}$ or $\frac{1}{8}$ inch, and when you get through there is $\frac{1}{4}$ inch missing and when you try to approximate the edges they cannot be closed. We have discontinued the useless sacrifice of skin unless it is definitely necrotic and avascular. When the wound is wide open we remove all the gross dirt we can see; the bone ends are washed with physiologic salt solution, the soft tissues are examined carefully, and the muscle tissue is cut until healthy twitching muscle is reached. Examination is made for nerve and large vessel injury; then, when the soft tissue is seen to be clean macroscopically, we put in the least possible amount of catgut ligatures. We believe the less foreign body put into the wound the better are the chances for the patient.

Sherman of Pittsburgh advocates immediate reduction and plating on all compound fractures. His results are excellent. We know that his results are just as good as he says. About seven or eight years ago Dr. Cubbins came back very much enthused about it and we had standing orders that all compounds were to be plated. We plated them all and for the next few months did a lot of amputations. Sherman is able to do it but we are not. We believe it is better to avoid foreign bodies in these fresh compound fractures. About one screw is the maximum amount of foreign material we use. Depending upon the type of case, we use skeletal traction or a plaster cast. In a fracture of both bones of the leg we usually use a Steinmann pin. However, that depends on the operator and the type of facilities at hand.

About closure of the skin there is much discussion as to whether it should be closed tightly or loosely or left wide open. In our experience

it has been found best to put in interrupted sutures about $\frac{3}{4}$ inch apart, loosely approximating the skin edges, thereby permitting the flow of serum and blood onto the dressings. They are removed when they become saturated. Some men close them tightly with continuous running sutures, but we are afraid of that. The accumulation of blood and serum frequently gives a very fine media for infection. We feel if we leave the wound partly open all the oozing will come out on the dressings, and any organisms will be washed out rather than allowed to stay in the wound. Some men pack the wound with vaseline and gauze and leave it open. We believe that is synonymous with infection and we are opposed to it.

Our results have been 90 to 92 per cent. clean compound fractures at the County by the above regime, in unselected cases. In those that become infected we immediately remove the sutures, permit the wound to gape and irrigate with two per cent. Dakin's solution. The dressings are changed twice a day or once a day if there is not much drainage. In the treatment of dead bone we do not remove any until Nature shows a definite line of demarcation. We feel that more harm than good is done by trying to separate living from dead bone with a chisel and hammer.

This is the treatment which has given us 90 to 92 per cent. clean cases. We believe that the success has been due to simplicity of treatment, thorough washing with soap and water, and thorough cleaning of the bone by the application of voluminous dressings over a loosely applied skin closure.

104 South Michigan Avenue.

DISCUSSION

Dr. Frederick W. Slobe (Chicago): Just as is applicable to so many of the economic ills of the world today, so there are many phases of the practice of medicine in which a return to fundamentals is indicated. Hence I am glad that Dr. Scuderi's major premise emphasized a return to basic principles in the treatment of compound fractures. After all, the only difference between a simple and a compound fracture is the presence of the complicating wound and no matter how skillfully the surgeon handles the fracture, if the wound is incorrectly treated, not only is there great danger that all the care used in treating the fracture is nullified, but also serious complications may ensue. Therefore, since the treatment of the wound is the most important feature in compound fractures, such treatment should be under the direct supervision

and care of the surgeon and not relegated to someone less familiar with the essential principles involved.

Except for the delay incident to the alleviation of shock, compound fractures must be considered as strict emergencies and as major operative procedures. The earlier they are treated, the smaller will be the incidence of infection. If they are not seen within five hours after the injury, most will have passed from the stage of mere contamination to one of beginning infection.

Meticulous cleansing of these wounds with gentle scrubbing and irrigation with soap solution must be patiently performed. This does not mean one pitcher of soap solution used in five minutes time, but often means many pitchers used over a period of from twenty to thirty minutes before the wound may be said to be adequately cleansed. Included in the surgical debridement which follows this cleansing, there should be a very thin section of the skin excised and a very thin section should be chiseled from the contaminated fracture edges when indicated. The amount of soft tissue excision is quite variable, depending upon the nature of the wound and the site of injury.

If generally favorable conditions exist and the above method of treatment instituted, many compound fractures can be converted into simple fractures by performing primary suture of the skin without drainage. Of course, there are always certain elements of doubt because of unknown factors such as the patient's resistance and the dosage and virulence of the bacterial contamination in the wound. The nature of the wound, the location and circumstances of the accident, the type of fracture and the time elapsing since the accident are additional factors which influence the surgeon in his decision as to the degree of closure of the wound. So, depending upon the degree of doubt in the mind of the surgeon, there are various gradations varying from the ideal procedure of primary closure. At times, inserting the sutures but not tying them for one or two days may give one an opportunity to observe the wound reaction. Sometimes a delayed secondary suture may be used after five to seven days, although by so doing, one always sacrifices a good coaptation of the wound edges. In other instances where there is very definite doubt, one of the safest procedures is the use of Carrell-Dakin tubes instilling either Dakin's solution, one per cent. chlorazene, or azochloramid in saline. These chlorine antiseptics do not seem to retard wound healing, definitely inhibit infection, and have an additional action which seems to bring about a reversal of the lymph flow. When these tubes are used, I think it advisable to suture them in the skin, leaving the original tubes in place until they are ready to be removed permanently. This way, there is no subsequent handling of the wound except for changing of the external dressings. If for any reason conditions are such that one of the above measures cannot be used, the Orr method may be indicated. When this method is used, its principles should not be violated postoperatively as the wound must be treated with scrupulous

care without subsequent messing with the wound, only the external dressings being changed at long intervals.

If the above measures are correctly carried out, the treatment of the fracture itself may not necessarily vary appreciably from the procedure used in simple fractures. Under favorable conditions, if the fracture is such that it is best held by a couple of screws or a plate, there is often no important contraindication to their use, providing one does not have to open up any new tissue planes in order to use metallic fixation. Sometimes a fenestrated cast may be used but very often because of the accessibility of the wound provided, a Thomas splint with skeletal traction will be found to be the best method. The Roger Anderson apparatus has a field here also, but as in all cases where skeletal traction is used, great care must be exercised to prevent over-traction; this requires the frequent use of follow-up x-ray examinations.

Careful adherence to the fundamental principles so well emphasized by Dr. Scudari will eliminate most of the hazards incidental to compound fractures, will vastly improve the end-results, and will enable us, in many instances, to convert compound fractures into simple fractures through the use of the ideal, primary closure.

SOME OBSERVATIONS ON CEREBRAL HEMORRHAGE IN THE NEW-BORN

HEYWORTH N. SANFORD, M. D.

CHICAGO

In studies that have been made of the causes of death during the new-born period, cerebral hemorrhage has been estimated as causing from 25 to 40 per cent. of these deaths. One reason for doubting some of these quoted statistics is the very grave difficulty of diagnosing cerebral hemorrhage in the new-born unless we have proof by autopsy, for as yet we have no absolute means of being sure of our diagnosis.

However, no matter how much statistics as to the frequency of cerebral hemorrhage in the new-born may vary in different localities, certainly any condition that is quoted as causing from one-fourth to two-fifths of the deaths in the new-born group should deserve wide attention. Unfortunately this attention has been directed towards the obstetrician as the person principally at fault. One always hesitates in making a diagnosis of cerebral hemorrhage in a new-born, because of the immediate defensive attitude of the obstetrician. Such terms in common usage as "birth injury," "obstetrical trauma," and the like seem to place the blame

back onto him. This unfortunate state of affairs has been further caused by various statistical studies which attempt to prove that at institutions where "good obstetrics" are practiced there is much less cerebral hemorrhage in the new-born than in other localities.

A new aspect and means of classification has been brought forth by the work of Craig in England. He has recorded the autopsy findings on 126 children dying of cerebral hemorrhage and endeavored to thoroughly study and classify the various etiological factors in each case. Obviously there must be two factors at work. First, a strain on the cerebral vessels, and secondly, some factor that causes a weakening of that vessel. These factors might exist alone but more often they occur together.

He has found that about one-half of these deaths were due to a subdural hemorrhage, 49 per cent. This was caused by a tearing of the tentorium, with a history of instrumental delivery or maturity of the mother. In the normal course of labor the head, if given a certain amount of time, can adjust itself to the most extreme conditions. If it is compressed in one direction it will lengthen in another, due to the excess play of the cranial bones in their fibrous separation. This results in the long-drawn-out heads seen in many long primiparous labors. As a rule it is found that the babies with the most moulding are in the least danger of cerebral hemorrhage. The head can also adjust itself to pressure in another way by lessening the blood supply and spinal fluid. This, grossly, literally contracts the size of the head.

It is quite true that this group comprising practically one-half of all these cases might be considered as being due to obstetrical manipulation but it will be seen that the causes of cerebral hemorrhage mentioned below might be due to allowing the labor to run too long.

The second largest group of deaths was caused by subarachnoid hemorrhages, a little over one-fourth of the total or 29 per cent. The third group of 17 per cent. were due to intraventricular hemorrhages. In both of these conditions the etiological factors were prematurity and illness of the mother during pregnancy.

Prematurity is a great factor in cerebral hemorrhage. Hess estimates that 39 per cent. of the deaths in the premature infants under his care were due to cerebral hemorrhage. The

premature is an unfinished organism. Its skin is delicate, its digestive organs are immature, and we know that the lungs are often atelectatic. What could be more possible than that its blood vessels are also delicate and fragile, and unable to withstand normal stress that would be no hazard to a normal full term mature infant. Certainly no one can blame manipulative obstetrics for a cerebral hemorrhage in a premature, yet all these deaths are lumped into the grand total.

Illness of the mother during pregnancy seems to be more of a factor than we realize. We do not know what factors may be involved or what organs may be damaged in the various illnesses of pregnancy. Sufficient that in many of these cases such a history can be elicited.

The final five per cent. of these infants were found to have hemorrhage into the brain substance. The etiology here seems to be a long labor, or one complicated by various accidents as malpresentation of the baby, cord about neck, rigid cervix, and prolongation of the interval of the time between birth of the head and birth of the shoulders. In this condition the mechanism seems to be anything that may cause asphyxia. There is an excessive cerebral venous congestion with a rise in intercranial pressure. This causes a diapedesis from the capillaries. Probably this condition is much more common than these autopsy findings show, for many of these babies recover. We call these cerebral edema, but it is hard to visualize when the capillaries may give up fluid alone and not some small amounts of blood as well. Recently Schreiber has thought that much of the cerebral asphyxia at birth may be due to the various narcotics and sedatives now popular in obstetrics.

The problem of the diagnosis of cerebral hemorrhage of the new-born is exceedingly difficult. The symptoms may come on at any time from immediately after birth to one week. Usually the earlier the symptoms the worse the prognosis. All have their own ideas of the importance of certain symptoms. It has always appeared to me that we have three cardinal symptoms. These are, in order of their importance, convulsions, cyanosis and flaccidity followed by spasticity.

The convulsions are the most important. These may be bilateral or localized. They most often begin with twitching of the mouth or face

and then spread over the body, or they may be generalized at once. They have a tendency to increase to a maximum, ending in death, or decrease with recovery of the child.

The cyanosis may be fleeting attacks at long or short intervals or continuous. In the premature the attacks are more apt to be at intervals. In the full term child they may be continuous with grunting, rapid respiration and pouting lips.

At the very beginning and usually for the first twelve hours the child is quite flaccid. After this it becomes spastic and it is somewhat difficult to move the extremities with ease, especially during a convulsive period.

These are the only signs that seem to me to be in any way characteristic. Usually all are present at some time or other during the course of the hemorrhage. There are other signs and symptoms that may exist in individual cases, but are not so frequent. These may be enumerated as restlessness, anxious expression, failure to nurse, adder tongue, shrill cry and fixed pupils. These may be seen so often in perfectly normal new-borns that they are not of much value in diagnosis. Bulging or spongy fontanelle is a suggestive symptom when it is seen, but is apt to be of rather late occurrence when it is seen at all.

The differential diagnosis of cerebral hemorrhage rests between other causes of convulsions or spasticity in the new-born, and conditions that cause asphyxia and cyanosis. Conditions causing convulsions or spasticity are cerebral edema, types of icterus gravis, sepsis, meningitis and tetany of the new-born. Conditions causing asphyxia are congenital heart disease, diaphragmatic hernia, atelectasis, thymic hypertrophy and adrenal hemorrhage.

As stated before it is very difficult to tell where a severe cerebral edema stops and a mild hemorrhage begins. These children are flaccid and may be cyanotic, and even have convulsions, and may even die, but autopsy shows no hemorrhage, only a very severe edema. The main difference is that they begin almost at once and are not as severe as in the cerebral hemorrhage. The Moro reflex is of help here. It is usually absent at once in cerebral edema and returns in a day or so, while it is usually present for twenty-four to forty-eight hours in cerebral hemorrhage; it

then disappears, and does not return until much later.

Icterus gravis may cause both convulsions and cyanosis, but here the intense jaundice should attract attention. Also the presence of erythroblasts in the blood smear indicates the erythroblastotic type of jaundice. Nuclear icterus gives marked cerebral symptoms but fortunately this is very rare.

Sepsis may give convulsions and cyanosis but the temperature, gastro-intestinal symptoms, and usual entry through the cord enlarges the liver and spleen, and indicates the condition. Meningitis is rare, but does happen. Usually it is a little later than cerebral hemorrhage, has gastro-intestinal symptoms, and shows a progressive cerebral involvement. A spinal or cistern puncture would clear this. Tetany in the new-born I have never seen. Cases that answer the descriptions given which I have seen all have had a normal or high Ca. content of the blood. Also they recovered without calcium therapy.

The group of conditions that cause asphyxia are very hard to differentiate, as extreme asphyxia may in itself cause convulsions. In congenital heart disease the heart is frequently more rapid and enlarged. Many times there is no murmur heard until several days later. Atelectasis and diaphragmatic hernia may not be diagnosed by auscultation and percussion. I have made it a rule to fluoroscope all cases of cyanosis in the new-born to rule out these two conditions, as well as enlarged thymus, which is rather uncommon. An enlarged congenital heart can also be confirmed by this means. Adrenal hemorrhage is almost too rare to consider.

In a discussion of the treatment of cerebral hemorrhage of the new-born, the first great problem is in prophylaxis. How can we keep this condition from happening? If we now return to our causes in the etiology of cerebral hemorrhage we find that 49 per cent. of studied autopsy cases show evidence of traumatic injury. There is no doubt that much of this group is an obstetrical problem. There is considerable evidence to show that conservative obstetrics will result in fewer of these injuries in this group. The problem of obstetrical procedure is one that can be argued long and ardently. Certainly the obstetrician is faced with a dilemma. Shall he rapidly deliver a child in which the heart tones are failing, and who is in danger of asphyxia,

running chances of the head failing to accommodate itself to an extra strain, or allow the child to be born in an asphyxiated condition, and have hemorrhage result from this cause alone?

Frankly I believe that he is justified in a rapid delivery. His position here rests on educating the public, and reeducating some of our more loquacious commentators on medical procedures that in such a condition the results may be as bad in one case as the other. It is such a common practice to question the mother of an idiotic or spastic child as to the type of delivery, and a knowing smile, or at least a raising of the eyebrows, always greets the statement that the delivery was instrumental. It is well known that about two per cent. of children are born defective mentally, and no one has yet shown that all of these conditions can be blamed on obstetrical procedures.

It would, no doubt, be beneficial if all babies could be born in ideal hospitals and delivered by certified obstetricians, but that time is far in the future. For a great many years to come the general practitioner will deliver the majority of our future generations and there is no reason that if the general practitioner gives a moderate amount of time to a delivery, and does not force the issue before nature's allotted time, that the results will not be uniformly good.

Looking further into our causes of cerebral hemorrhage we find that the remaining 51 per cent. or a little more than half do not have an obstetrical injury background at all. Here the principal causes appear to be just two: prematurity, and illness of the mother during pregnancy.

The premature, besides being likely to succumb shortly after birth from a variety of causes due to its delicate organization, is a heavy economic loss to raise. The time is past when labor is induced early to deliver a premature infant and then turn it over to the pediatrician to raise. We do know that there are too many hazards to overcome. Everything should be done to overcome the chances of a premature labor, and in this the health of the mother is the greatest factor.

The problem from an obstetrical standpoint is much more important during the stages of pregnancy than in the actual delivery. Every mother should have the benefit of a thorough physical and pelvic examination. All minor defects that

might interfere with a successful labor can be successfully corrected at this time. Teeth can be filled and cared for, points of infection may be eliminated, and more serious conditions watched. This applies particularly to hyperthyroidism, heart disease, and poor functioning kidneys. A routine blood examination will eliminate danger of anemia or syphilis. The diet can be checked and a good nutritious diet, rich in salts and vitamins, ordered. Most of all the prospective mother should be watched continually during pregnancy.

The problem of diet and vitamins has been so unfortunately stressed by commercial organizations that the medical man is, perhaps, quite discouraged by the mass of propaganda developed. However, there may be more to this than we are aware. About two years ago we happened to estimate the blood vitamin C on a new-born suffering from cerebral hemorrhage. To our amazement it was found to be 0.46 mg. per cent. Since this time we have estimated the blood vitamin C consistently on all of our children suffering from cerebral hemorrhage and have found it to be low in every incidence. The highest we have ever found was 0.56 mg. per cent., which is 0.24 mg. per cent. lower than the average of the normal new-born. The blood vitamin C value of the new-born is directly influenced by the blood vitamin C value of the mother, and in every incidence of cerebral hemorrhage, the mother likewise had a low blood vitamin C value. We do not feel justified in making the statement that this may be a cause of cerebral hemorrhage, but we do feel that it might have some bearing on the condition of the child at birth. Could not a low blood vitamin C be a factor in the fragility of the cerebral capillaries if any extra strain was put on the system?

It is so easy to take care of the vitamin C blood quantity in the new-born. In the groups of mothers that we have studied, it was found that one orange a day would keep the mother's blood vitamin C up to an average of 1.88 mg. per cent., and even one orange a week will keep it at 0.72 mg. per cent. Mothers on a diet of barley any citrus fruits at all had an average of 0.54 mg. per cent. As stated before, the mother's blood vitamin C will influence the amount of her infant's vitamin C and all that is necessary

to give an optimum value is to give citrus fruits in the diet of the mother.

Finally we come to the treatment of the actual infant with cerebral hemorrhage. Some clinics regularly give every infant born with a hard labor or instrumental delivery whole blood intramuscularly. It seems to me that this is unnecessary. Studies which we have made show that small quantities of either father's or mother's blood injected intramuscularly have no effect on the coagulation time of the infants as shown by any clinical or laboratory means at our command. In fact they rather increase the time of coagulation of the infant's blood. Furthermore, to expect any effect from intramuscular blood injections at all we would have to assume that cerebral hemorrhage is on the basis of a hemorrhagic disease, or a clotting dysfunction. Nearly everyone admits that there is no evidence to support this. We have been making estimations of coagulation functions on babies with cerebral hemorrhage for years, and have never found any to be in a hemorrhagic state.

The same thought holds true in babies with actual cerebral hemorrhage. True, on the possibility that this may be the one unusual time that there is a hemorrhagic factor, the bleeding and coagulation times should be estimated. If they are increased, well and good, then you may give an injection of blood, but I do not believe it is justified otherwise. The argument is put forth that it will do no harm. I am not so sure. As we have said, there is some evidence that intramuscular injections of parent's blood may lengthen the coagulation time. This would be disastrous to a bleeding vessel that has already ruptured. Moreover, it results in manipulation of the baby that might further endanger the flow of blood, and lastly it has a tendency to raise the temperature. This always bothers me as to a prognosis factor. Babies with a hemorrhage over the cerebellum will frequently show a hyperpyrexia, and this is a bad sign. I do not know when a baby has received blood whether the temperature rise is due to the blood or the location of the hemorrhage.

After a ten-year period of trying the various methods advocated for the treatment of cerebral hemorrhage we have finally decided that the less we manipulate the baby the better. I do not feel that I can tell where a severe cerebral edema begins and a mild hemorrhage starts: so all babies

exhibiting signs of cerebral irritation at birth are placed in a bassinet, with the head at an angle of 30 degrees, and not disturbed except for changing and feeding for from forty-eight to seventy-two hours; if by this time the symptoms have subsided, they are then sent to breast.

In an obvious cerebral hemorrhage this treatment is continued as long as necessary. The baby is kept from any unnecessary manipulation. They are fed by bottle, as much as they will take without forcing, at four-hour intervals. I do not believe the food is of much importance as long as it is easily assimilated. I used to give injections of ten per cent. glucose subcutaneously, but have decided that five per cent. glucose by mouth is just as efficient. This is easily assimilated, keeps the baby from becoming dehydrated, and, theoretically, should help to reduce the cerebral edema present.

I have also given up spinal punctures, and cistern punctures as a means of either diagnosis or treatment. Spinal puncture in the new-born is quite difficult without the admixture of traumatic blood, and cistern puncture is too dangerous. It is doubtful if the presence of blood in the spinal fluid is of any clinical significance. Hines Roberts found blood in the spinal fluid of sixty infants within three days of birth and in only twenty-six of these was there any clinical evidence of some cerebral pathology. Twelve of this latter group died, but in all the remainder there was no evidence of any injury at all, and they remained quite well. Some advocate a spinal puncture during an active case to remove pressure. It has always seemed to me that by the time diagnosis was made, the damage had been done and any extra manipulation made simply increased the tendency to bleeding.

As to the symptoms that may arise, it is sometimes advocated that spinal puncture will help the convulsions. I have never found this to be the case. The same is true of narcotics and sedatives. It has never seemed to me that they had any real effect on the convulsions. Oxygen or five per cent. carbon dioxide and oxygen are helpful for the cyanosis. This may be given continuously during the cyanotic attack, and at fifteen minute intervals of each hour during the active stages. For stimulation 1 to 1000 adrenalin subcutaneously, in amounts of five to ten minims may be given as necessary. The principal thing is to keep the baby warm and quiet,

and to handle him as little as possible. By the time the diagnosis is made the damage has already been done and healing can best be helped by rest and no manipulation.

952 N. Michigan Avenue.

BIBLIOGRAPHY

- Craig: Arch. Dis. Child. 13: 89, 1938.
Hess: Brennemann's Practice of Pediatrics, 1938.
Roberts: J. A. M. A. 85: 500, 1925.
Sanford and Fleming: J. Ped. 13: 314, 1938.
Sanford and Leslie: J. Ped. 12: 3, 1938.
Schrieber: J. A. M. A. 111: 1263, 1938.

AUTOPSY FINDINGS IN 126 CASES OF CEREBRAL HEMORRHAGE (Craig 1938)

Lesion	No.	%	Cause of Lesion
Subdural hemorrhage	62	49	Tearing of tentorium. Maturity of infant, and instrumental delivery.
Subarachnoid	36	29	Prematurity, and illness of mother during pregnancy.
Intraventricular	22	17	Prematurity of infant, and illness of mother.
Hemorrhage into brain substance	6	5	Long labor with mother at end of reproductive period. Usually a large first-born.

Dr. Clifford Grulee, Evanston: Dr. Sanford's ideas represent what I have thought for a long time. I simply want to say that there are two cases that stand out in my memory that show the difficulty of making the diagnosis of cerebral hemorrhage. One was some years ago—to be exact about seventeen. The child was twenty-four hours old, the son of a doctor, his first born. There were three other doctors besides myself there. The child was having convulsions repeatedly, and twitchings, and he was quite blue. We all agreed that he had had an intracranial hemorrhage but the dispute between us was that the rest of them wanted to do a lumbar puncture and I held out against it. I was probably more stubborn than the rest because we did not do a puncture. The other day I asked the father about the boy. The boy is about to graduate from an academy. He had one convulsion at the age of three or four during an acute febrile disturbance. I asked about any mental deficiency and the father said that the boy is not very good in mathematics but he felt this was inherited.

The second case was seen at Wesley Hospital. This was an only child with unilateral sweating and was three days old. This second child was having convulsions right along. I could not find anything wrong and I made a diagnosis of hemorrhage and predicted it would not live for twenty-four hours. That child died. We got a complete autopsy and to my chagrin the only thing we found was a congenital heart lesion. There was not a sign of any intracranial hemorrhage. Naturally, with such experiences as that, I am humble when it comes to the diagnosis of this condition.

Thank God we live in a country where the only dictators men tolerate are the ones they marry!—
Foreign Service.

DIABETES AND SURGERY

WALTER W. VOIGT, M.D., F.A.C.S.

From the St. Joseph's Hospital
Chicago

With the thought that we learn best from our less favorable results, the author has decided to publish the following case and discuss the problem of diabetes and surgery. It is a case in which the patient was not saved, despite the cooperation of surgeon, internist and roentgenologist. The case history was as follows:

The patient, a male aged fifty-four years, was known as a latent diabetic because of the occasional finding of sugar in the urine. A furuncle appeared on the back of his neck and he tried to remove it by squeezing it out and succeeded only in spreading the inflammation. Finally, after long delay, he came to the hospital with a woody phlegmon that covered the whole neck. Upon admission to the hospital his temperature was 103° F., and the white blood cell count 34,500 with a differential count showing 71 per cent. stabs and 8 per cent. juveniles; urine showed a sugar of 4+ and the blood sugar was 86 mg. per 100 cc. of blood.

An x-ray treatment was given to the neck in the hope of localizing the inflammation without success, as the inflammation had advanced considerably by the next day. An internist was called in who put the patient on a diet and treated him with insulin to forestall a coma. Then a deep incision, made across the middle of the hard swelling, opened up numerous small abscesses; the tissue was fairly honeycombed with them and many of these abscesses remained unopened above and below the incision. No necrotic tissue was removed because the bleeding was already rather profuse. The deep wound was dusted with charcoal powder to absorb the secretion and reverse the lymph stream.

The patient stood this treatment very well. His blood sugar fell on the second day after operation, with the aid of diet and insulin, to 71 mg. per 100 cc., and there was no sugar in the urine. On the third day after operation the urine was still free of sugar but the blood sugar was up to 222 mg. per 100 cc., and the blood count revealed leukocytes 29,000 with 5 per cent. juveniles, 20 per cent. stabs and 52 per cent. segmented cells, a total of 77 per cent. neutrophils. In the meantime the patient had had several roentgen treatments and antistaphylococcus serum had been given daily. The wound itself was treated with urea, with which the writer had had good success in cases of abscesses, the urea digesting the necrotic tissue and so withdrawing food supply from the bacteria. In previous cases so treated the wound cleared up in three days and healed quickly thereafter.

In this case, however, the urea had no visible effect, nor did enzymol. The inflammation advanced unchecked in every direction, reaching anteriorly as far as the sternocleidomastoid and down as far as the tip of the shoulder blade. At the same time a softening set in in the neck area of the phlegmon. There was

no more sugar in the urine, but the blood sugar remained at the high point of 200 mg. per 100 cc.; the leukocyte count remained about 29,000 with 80 per cent. neutrophils.

A large area of the phlegmon having become soft, the abscess was opened under ether and drained. This was done eleven days after the first operation and after repeated x-ray treatments which had not arrested the infection. The patient's general condition was poor, notwithstanding the satisfactory leukocyte count. Two days after this second operation a blood transfusion was given, but the patient failed to respond to this and expired on the same day.

In studying the progress of the disease, it strikes one that the patient showed a strong reaction against the infection with a temperature of 103° F., a leukocyte count of 34,500 and 70 per cent. neutrophils. Opposed to this was the blood sugar of 286 mg. per 100 cc. and a 4+ sugar in the urine. Following the first operation (deep incision) and heavy insulin dosage, together with special diet, the blood sugar went down to 71 mg. and there was no more sugar in the urine; the leukocyte count remained about 30,000 with 80 per cent. neutrophils. This showed plainly that a sufficient drainage of the toxins did not result from the incision and absorption by means of the charcoal. On the third day after operation the blood sugar rose to 222 mg. per 100 cc. of blood, and, in spite of insulin and heavy insulin dosage, it persisted at that point. There had been no success in making the sugar serviceable to the body, which left the body cells defenseless against the infection. Therefore, it became clear that it was necessary to draw off the toxins in some way. Attempts to do so with urea and enzymol proved futile. The inflammation advanced unabated. It was evident that the entire hard mass of tissue should have been extirpated like a tumor, as shall be emphasized later, but at the time such procedure seemed to be excessive and recourse was made to means that were evidently inadequate. The author would, in similar cases, advocate the radical operation, following prior copious blood transfusion to supply healthy leukocytes, together with heavy insulin dosage.

The x-ray treatments did cause the hard parts to soften, but proved ineffectual in checking the progress of the disease. Only radical extirpation of all the necrotic tissue could have done

that. Plastic surgery could have taken care of the disfigurement later on.

In considering the problem of diabetes and surgery, one should distinguish, first of all, between affections that develop independently of diabetes, such as appendicitis or a wound, and diseases that are caused by diabetes, namely diabetic gangrene and infection (carbuncles, phlegmons accompanied with cellular necrosis and general infection).

Diabetes consists essentially in a disturbance of the balance between adrenalin and insulin. Adrenalin mobilizes glycogen from the liver; insulin checks the glycogen secretion and builds up the sugar into glycogen. In diabetes the insulin is more or less lacking so that the cells cannot oxidize the carbohydrates. The body must, therefore, attack its fat reserves but, under the circumstances, the fat is not properly broken down. Ketones develop, producing acidosis, although the condition is really a diminution of the alkali reserves. Ketosis implies cell lesions and these appear especially in the circulatory system. Diabetic coma may be the outcome.

It is to be noted that the precomatose condition often shows symptoms similar to those of peritonitis, and diagnostic errors are likely.

The author not long ago had a female patient in whom a diagnosis of carcinoma had been made because of pains in the region of the stomach associated with considerable loss of weight. Acetonic odor made the proper diagnosis comparatively easy and on improving the diabetic condition the stomach trouble and loss of weight ceased. Therefore, it seems important to keep in mind such abdominal trouble as a precomatose condition.

When a diabetic patient is prepared for an operation which is not an emergency, the case is simple enough. However, when the operation is urgent, there is the danger of coma which may set in unexpectedly and escape notice when, for example, a septic toxic condition disguises it. In cases where the urine contains sugar, a blood sugar test should be made and heavy doses of insulin and glucose given, and in two to three hours the operation can proceed without great risk.

Operation increases the involvement of the metabolic condition, especially when there is the question of a suppurative or inflammatory dis-

ease. When such disease is present the demand for insulin is more pronounced. When the infection has gone down less insulin is needed. The purpose of this insulin treatment is less to remove the sugar from the urine than it is to convert the sugar for the benefit of the organism. A too rapid withdrawal of carbohydrates increases the danger of acidosis in consequence of the imperfect oxidation of fats.

If there is time to prepare the patient for operation, it is possible to give him copious carbohydrates under the protection of the insulin. At the same time fats should be reduced, for they are the source of the ketones. Here, as well as later, the surgeon should work hand in hand with the internist whose place it is to supply the aftercare. Incidentally it is to be remembered that the diabetic, dehydrated body attracts water greedily and this is harmful, insofar as edematous tissues cause slack granulation and thus retard the healing process of the wound. Edematous tissue is also more susceptible to infection.

A further point to note is the possibility of hypoglycemia under insulin treatment. The symptoms here are so manifold that a diagnosis is not easy, especially if the hypoglycemia follows coma.

It must be remembered that, in spite of insulin treatment, a diabetic metabolism is never normal and for that reason the greatest caution is advised before proceeding to operate.

In considering diabetic gangrene, it must be noted that diabetes consists essentially in a depression of cellular vitality due to the diabetes and arteriosclerosis and sometimes complicated by thrombosis. The arteriosclerosis leads to a narrowing of the arteries and with it to a diminished blood supply to the cell. If thrombosis sets in or if there is vascular closure, gangrene ensues. Gangrene appears at an earlier age in life in the case of the diabetic than in the case of the arteriosclerotic, because the diabetic cell as such has less power of resistance, due to its altered chemistry.

In diabetic gangrene, what is the course to pursue? This depends on whether it is a dry or moist gangrene. In the case of a dry gangrene, as for example a black toe, immediate amputation would not be indicated, as necrosis of the wound would follow. In such a case the line of demarcation would have to be awaited

and attempts to prevent infection instituted. The development of a moist gangrene must be forestalled by the use of some absorbent powder, such as xeroform. Moist dressings harm the already weakened cells and induce moist gangrene.

If the line of demarcation is clear, a less extensive operation, such as the amputation of a protruding bone, can help to correct the stump. A more prolonged surgical procedure must be avoided. Even if the gangrene is moist and, therefore, infectious, operation can still be postponed safely by the use of insulin and absorbent treatment with careful observation of the affected limb which is kept at complete rest. A gypsum cast is the best means of obtaining absolute rest. The battle to save the limb may then begin. Immediate amputation is not necessary so long as the pulse of the posterior tibial artery remains, but the infection must be checked by means of wide incisions and the cells must be supported with insulin and proper diet. The incisions must leave no pockets but must ruthlessly bare all fistulae and remove all dead tissue. Should the inflammation progress there is no choice but to amputate. The amputation should be high, preferably above the knee, and should be done with a plain circular cut. The wound must be regarded as infected and must be left open. The soft parts can be kept from slipping back and forming a conical stump by means of traction by strips of adhesive tape. General anesthesia is advisable so as to avoid the mental shock of the amputation. Evipal and pernocton act harmfully on the liver so are to be used with care. Ether is not without its bad reactions, as acetone may ensue. Nitrous oxide narcosis seems to give the best results, as there is no postoperative vomiting, and hunger and vomiting would favor acetonuria.

The aftercare of these cases is the task of the internist. Only in this way can the development of a new gangrene be prevented. The least symptoms of dullness in the limbs, pains in the calves or limping must be noted. Pressure of a shoe or garters must be avoided. Where necessary vasodilator medication, suction apparatus with negative pressure and sympathectomy should be employed.

Diabetic patients are often attacked with infections such as carbuncles and phlegmons. These show a ready tendency toward malignancy

and progression. The body has little power of resistance, the vitality of the cells is diminished, and added to this there is depressed phagocytosis.

The quantitative conditions of the blood have been most minutely investigated, both in health and disease. The proportionate count of the white blood cells is important and warrants certain conclusions as to disease and its prognosis. Now, however, the Nægeli school justly emphasizes the importance of the qualitative and morphological changes in the blood. Their researches disclose that the pathological structure of the granulocytes is essentially completed in the circulating blood. It is plain, therefore, that the gravity of the changes is an index of the severity of harm done in the blood periphery, whereas the numerical values are more closely related to the source from which the blood cells take their origin. The extent of the changes in the white blood cells depends quite definitely upon the extent of the resorbent area of the inflammation. As stated previously, it is a matter of toxic changes in the white cells caused by resorbed substances in the periphery. The changes affect the nuclei and the granulation. In cases of Arneith's "shifting to the left," it is not only the juvenile immature neutrophils which are concerned, but also damaged mature cells. The toxic reaction causes changes in the nucleus, the protoplasm and in the granulation of the neutrophils.

The characteristic of the toxically damaged nucleus is nuclear pyknosis. The pyknotic nucleus shows several nuclear particles massed together in the center of the cell. Nevertheless, there need be no substantial change in the segmentation of the nucleus. The protoplasm shows an increased number of basophils under pathologic conditions as its characteristic evidence of toxic injury. The fine neutrophils show decided changes under pathological conditions; they appear as gross, plump granules of unequal size and have a decided basophilia; often, too, there are vacuoles in the protoplasm.

In the case under discussion there was to the very last a more than favorable number of leukocytes present, quantitatively speaking, and the share of neutrophils was normal to the last, but these cells were poor in phagocytosis and qualitatively altered. This explains to the author the patient's low resistance against the infection, in

spite of the fact that the urine had been rendered sugar free.

Thus, every infectious process constitutes a great danger to a diabetic. With his resistance quite low against pyogenic bacteria, the local infection as well as necrosis and general infection make rapid progress. A vicious circle thus arises, in which the metabolic condition becomes worse and this in turn favors infection.

Cases of the type reported herein should be submitted to the cooperative treatment of the internist and surgeon at an early stage. At the same time, it should never be forgotten that external indications of the extent of the infection are deceptive. Reaction on the infection is slight so that the indications of inflammation, such as redness, swelling, fever and pain are absent. Because of this an apparently superficial furuncle on the back of the neck may in reality have pus fistulae into the spinous processes of the vertebrae and the phlegmon may have spread far up under the scalp.

As long as the infectious process has no external outlet, as long as any cavities remain from which toxins can be absorbed, a great quantity of insulin is required and the sugar in the blood will remain high. Upon wide external drainage the need of insulin is considerably lessened. At this point the surgeon and internist are liable to differ decidedly as to the proper steps to follow: the internist will consider it his duty to improve the metabolism, but that can do no good unless the pus center is laid well open.

What is to be done? A non-diabetic carbuncle can be treated conservatively; a diabetic carbuncle cannot. The necrotic focus must be removed as soon as possible. Thereafter the patient makes a rapid recovery, in spite of the severe treatment, because the insulin can now take its full effect. Incision is made preferably with the radio knife; this keeps the loss of blood and the traumatic shock down.

SUMMARY

In cases of gangrene, whether dry or moist, insulin treatment has not had great success because in such cases it is not the diabetic disturbance of the metabolism which plays the important rôle, but rather arteriosclerosis and thrombosis. The cases are rare in which diabetes is the chief factor and, in these, insulin is of the greatest value.

On the other hand, insulin is a very important step forward in infectious processes of every kind, combined with blood transfusion and radical surgical treatment of the focus of infection.

It is self-evident that the disturbances in the metabolism have to be combated with insulin and diet also in cases of gangrene.

6633 Sheridan Road

REFERENCE

1. Floor, W.: Die Bedeutung der qualitat Veramderungen der Leukozyten. (Geo. Thieme, Leipzig, 1929.)

SUDDEN DEATH: ANATOMIC FINDINGS

B. MARKOWITZ, M. D.

BLOOMINGTON, ILL.

Sudden death in an apparently healthy individual or unexpected death in an individual known to be chronically ill, is always a spectacular phenomenon; it raises many medical and legal problems. The primary medical problem is easily solved if sufficient anatomical changes are found which justify a cause for sudden death. There are instances, however, in which a properly performed and well done autopsy fails to reveal such anatomical justification; this is especially true in infants. Yet testimony is constantly being given by physicians and lay coroners who have little or no information on the subject. The primary legal problem depends entirely upon the medical findings. First, is death due to so-called "natural causes" or is death due to violence? Secondly, if due to violence, is it murder or suicide? No mention is made in this writing of death explained by chemical and toxicological examinations. Assuming that these examinations have ruled out poisoning we will concern ourselves only with the anatomical findings in cases of sudden death of questionable origin.

Probably the most common anatomical findings in these cases refer to the heart. Acute heart failure presents extreme dilatation of the heart. There are, however, other associated changes which indicate that while death was sudden the disease was long-standing. Valvular disease is very often found in sudden heart failure in which there is marked dilatation, especially of the right side. Just as frequently we find hypertrophy of the left ventricle with rounded apex indicating chronic hypertensive disease. Besides dilatation there are always

degenerative changes in the heart muscle. The myocardium is described as pale, friable and, microscopically, fibrous changes are noted. In some cases of acute heart failure there is an additional finding of marked pulmonary edema.

Coronary changes are of extreme importance in cases of sudden heart death. If definite thrombosis in the main arteries is found or for any other reason the coronary artery is completely occluded, the cause is easily explained. Occasionally numerous small thrombi which do not occlude the main arteries are found only by microscopic examination occluding the very small branches. In these cases, as described by Plaut and Kramer,¹ there is wide spread myomalacia in face of intact and unobstructed large coronary branches while the small branches are severely hyalinized. There are coronary arterial changes however such as calcified and atheromatous plaques which cause narrowing of the lumen but no occlusion; in these cases it is difficult to give an anatomical cause for sudden death. True enough we accept the explanation that in such cases a spasm² of the coronary vessel occurs manifesting the clinical syndrome of angina pectoris, but anatomically it cannot very well be proved. Jaffe³ has repeatedly demonstrated however, that extensive myomalacia and myocardial scarring may result from sclerosis of the coronary arteries without complete occlusion. His explanation is that any disproportion between demand and actual supply in blood may be the cause of grave impairment to the heart muscle. Examination in these instances fails to disclose sufficient arterial change to account for the extensive myocardial damage. The explanation given is based on a functional disturbance in which angiospastic attacks occur in the arterioles with temporary but complete stoppage of the capillary circulation. While accepting this explanation as a possibility we must also keep in mind that in routine postmortem examinations in cases of malignancy, chronic wasting and a multitude of other diseases in which lingering death occurs, higher grades of coronary sclerosis may be found than in those given as causes of sudden death. There are, of course, cases in which atheromatosis is so severe in the coronary arteries as to produce complete occlusion of the lumen. In other cases, particularly in syphilis, the coronary arteries are but little

involved, but the aorta is puckered to such a marked degree that it may produce sudden death by occlusion of the mouth of the coronary. Syphilis as an entity may be blamed for sudden death in other instances such as rupture of the aorta or cerebral vessel through a syphilitic aortitis or rupture of a syphilitic aneurysm. Aneurysm is one of the most common complications of syphilitic aortitis, especially in negroes in whom it is found twice as common as in the white race.

Next to the heart, the brain is probably the most frequent seat of anatomical changes which produce sudden death. Rupture of one of the basilar cerebral arteries with large hemorrhages into the cranial cavity are common causes. Such ruptures can often be explained on a basis of hypertension sometimes associated with arteriosclerosis. Similar cerebral accidents are found secondary to ruptured aneurysms of cerebral vessels. Such aneurysms are most frequently found in the anterior communicating and middle cerebral arteries. They may be congenital, may be due to atheromatosis or syphilis, or may be of mycotic embolic origin. Occasionally we find a sudden hemorrhage into a brain tumor.

Sudden deaths due to pulmonary disturbances or edema of the larynx are quite often encountered but rarely without history of some previous disease. Pulmonary embolism, a very definite anatomical finding in explaining sudden death, usually follows some operative procedure, or history of thrombophlebitis, especially of the pelvic and femoral veins. Shennan⁴ reports that in eighty per cent. of the cases the embolus is a detached portion of a thrombus originating in veins (most frequently varicose) of the lower extremities. The fat embolism following fracture may cause sudden death, sometimes occurring many hours after the patient is in apparently good condition. It is questionable whether air embolism which is so often feared, is ever a cause of sudden death. In the face of laryngeal infections, especially diphtheria, edema of the larynx can often be demonstrated at postmortem. In all cases of pulmonary and laryngeal deaths, therefore, the history of the antecedent illness is of extreme importance.

In cases of shock, whether anaphylactic or surgical, anatomical evidence of death is difficult to demonstrate. Tremendous dilatation of the

veins in the splanchnic area may be found but no other demonstrable factor to which death can be attributed. The mechanism of death is unknown; the theoretical explanation of a neuro-circulatory disturbance bears some weight in view of the minor injuries and even emotional distress which may precipitate shock. Bohrad⁵ speaks of sudden death in an individual who was suddenly apprised of her husband's death. Postmortem examination revealed marked dilatation of the splanchnic vessels but no evidence of any acute or chronic ailment. The so-called "status lymphaticus" may be a similar neuro-circulatory disturbance. There are exceedingly few who still insist that an enlarged thymus *per se* is the cause of death. There are some, Symmers,⁶ who believe there is a condition called "status lymphaticus" which on slight trauma predisposes to sudden death. As expressed by Farber,⁷ many pathologists believe that there is no justification for the diagnosis of status lymphaticus and that the cause of death must be sought elsewhere in the body. The thymus of children found in cases of accidental death is often larger than those which are erroneously blamed for sudden death. True enough, a child with universal hypertrophy of lymph tissue may die suddenly but this hypertrophy cannot be shown to be the cause of death. It is more likely an individual manifestation related to the disturbance of shock; an expression of a defect of some sort which renders the individual more susceptible to outside influences.

Sudden death may occur in an individual who has been on a prolonged drinking spree. Connor⁸ believes that an alcoholic debauch may precipitate an acute and fatal exacerbation in a patient who has had cirrhosis of the liver over a long period of time. St. George⁹ reports that frequently sudden death in an alcoholic may be explained mechanically by a particle of food obstructing the larynx and not the alcoholism *per se*. The history in these cases usually indicates chronic alcoholism and anatomically the essential findings are extreme fatty degeneration of the liver with varying degrees of cerebral edema. Death is most likely due to hepatic insufficiency. In one such instance I found a frank lobar pneumonia which was overlooked because the patient

was treated for delirium tremens and all his symptoms were attributed to alcoholism.

CONCLUSION

The anatomical findings which determine the exact cause of sudden death are often difficult to demonstrate. At all events a complete post-mortem examination, together with a medical history and physical examination, is absolutely essential. In addition it is often necessary to rely upon bacteriologic and toxicological examinations in order to justify a definite statement as to the cause of death. Apparently the medical profession does not realize the difficulties encountered and has allowed the legal layman and the family physician to dominate the investigation of causes of sudden death. Such cases are every day legally investigated by incompetent men who render decisions without competent postmortem examinations; in many instances without a necropsy of any kind.

BIBLIOGRAPHY

1. Plaut and Kramer: Circulatory Failure, Arch. of Path., Sept., 1936.
2. Leary, Timothy: Coronary Spasm, Amer. Heart Jour., 10: 338, 1935.
3. Jaffe, R. H.: Cook County Hospital, Chicago, Pathological conferences.
4. Shennan, Theodore: Postmortems and Borbid Anatomy. Wm. Wood & Co., Baltimore, 3rd edition, 1935, p. 68.
5. Bohrad, Milton: St. Francis Hospital, Peoria, Ill., personal communication.
6. Symmers, D.: Status Lymphaticus, Amer. Jour. Surg., 26: 7-14, 1934.
7. Farber, Sidney: Unexpected Death in Early Life, New Eng. Jour. of Med., 219: 836, 1938.
8. Connor, C. L.: Infiltration of the Liver and the Development of Cirrhosis in Diabetes and Chronic Alcoholism, Amer. Jour. Path. 14: 347, 1938.
9. St. George, A. V.: Performing the Medicolegal Necropsy, Amer. Jour. of Clin. Path. 39: Jan., 1934.

COLLOIDAL MERCURY SULPHIDE AND WASSERMANN FASTNESS

S. J. ZAKON, M. D., and M. A. JACOBSON, M. D.

CHICAGO

"Mercury was applied to the treatment of syphilis almost as soon as the disease appeared in Europe. Since then it has retained its position subject to divers changes of fashion, being sometimes exalted, at other times decried, but generally regaining favor on account of its own

virtues, as well as by the failure of rival remedies."—Alfred Fournier.

Seroresistant syphilis, more particularly in young people, has become a serious problem for individuals desiring marriage licenses in accordance with the Saltiel Law of the State of Illinois. The provisions of this law make it compulsory for the Clerk of the Court to refuse a marriage license to any individual having a positive complement fixation test (Wassermann reaction) or a positive flocculation test (Kahn reaction) for syphilis. The present law applies to all individuals, having positive serologic tests, regardless of infectivity or the amount of previous antisyphilitic therapy with acceptable drugs. In all probability, the present Saltiel Law will soon be amended so as to overcome the unscientific provisions.

Many of our clinic patients have been refused marriage licenses, due to their positive Wassermann and Kahn reactions, even though they had received two or more years of adequate treatment with neoarsphenamine, bismuth and mercury. The existent situation has initiated our search for a suitable drug which might aid in changing a persistent positive serologic reaction to negative.

In reviewing the vast scientific and clinical literature on seroresistant syphilis, we are impressed by the number of reports revealing the value of colloidal mercury-Hille, (accepted by the Council on New and Non-official Remedies, American Medical Association) in altering persistent serologic reactions to negative.

Lawless¹ states that "The serologic results show an ability of this therapy (HgS) to alter the Wassermann reaction in a sizeable percentage of cases immediately after termination of treatment and in a slightly greater percentage a month or more later" (thirty to forty-three per cent). Freeman, Taylor and White² state "that colloidal mercury sulphide-Hille is a potent antisyphilitic in late syphilis, particularly in latent and so-called Wassermann-fast cases; and is unusually efficacious in rendering the Wasserman negative." Similar statements were published by Wakerlin³, Dubois⁴, Pugh⁵, Blech⁶ and Gennerich⁷, who administered colloidal mercury-Hille intravenously, and obtained excellent results.

Furthermore, Stokes⁸ states: "Colloidal mercurial preparations are deserving of further ther-

apeutic and chemical study and an effort should be made, either through them or through some other aspect of the pharmaceutical chemistry of mercurial compounds to develop a really satisfactory mercurial preparation for intramuscular and intravenous administration."

Moore and Padget⁹ define seroresistance in early syphilis as that form of the disease in which the result of the serologic tests for syphilis remains positive after six months of continuous therapy, and seroresistance in late syphilis (i.e., syphilis older than four years) as that form of the disease in which the result of the serologic tests for syphilis remains positive after the equivalent of a year of continuous therapy. O'Leary¹⁰ stresses the importance of the "age" factor in considering seroresistance, i.e., the age of the patient and the "age" of the syphilis. In other words, early latency in a young individual is of greater significance than late latency in an aged individual.

However, O'Leary emphasizes the important fact that latency in women during the child bearing years is a much more serious problem than latency in man, since a woman with latent syphilis may give birth to a syphilitic child even though she were well treated during the early stages of the disease.

We chose twenty women patients who had been treated for long, continuous periods with courses of neoarsphenamine and bismuth, but maintained persistent positive Wassermann and Kahn serologic findings. We administered five cc. of colloidal mercury-Hille either intravenously (median basilic vein) or intramuscularly (buttocks), once a week, eight to fifteen weeks. Each week, the patient submitted a urine specimen for routine examination. Following the fifteen-week course of therapy, we again checked the blood serology.

During the course of these treatments, we have not encountered any untoward effects such as pain at the point of the injections, nitritoid reactions, albuminuria or signs of mercurialism.

Our experience in the present studies, as well as with thousands of injections of colloidal mercury-Hille in courses of routine therapy in our clinic and private patients, does not reveal a single instance of renal toxicity, as judged by the presence of albuminuria or casts.

Occasionally, we, as well as previous investigators, have encountered discolorations of the skin

at the point of injection when the colloidal mercury is administered intramuscularly. We have no explanation for the occurrence of this finding. We cannot explain why one patient, receiving fifteen intramuscular injections, does not reveal any discoloration, whatsoever, while another patient, receiving one injection, may develop discoloration at the site where the needles pierced the epidermis. However, it is our impression that patients with flabby buttocks are more prone to discoloration than other individuals.

We have found that with careful technique, colloidal mercury-Hille by the intravenous route does not produce discoloration of the skin. Oc-

asionally, a paravenous injection may result in slight discoloration.

The Table reveals the type of patients, age, type of disease, and serologic results obtained following the course of therapy with colloidal mercury.

The blood serology of five patients (twenty-five per cent. in the described series) were altered from positive to negative; and one case revealed a doubtful reaction.

DISCUSSION

The use of mercury in the treatment of syphilis began soon after the appearance of the disease in Europe. Few drugs, in the history of

THE CHICAGO MATERNITY CENTER

Patient Number	Age	State of Syphilis	Duration of Treatment with Neo. and Bis.	Serology Report Before Hg. Coll. RX	No of Hg. Coll. RX	Serology After Hg. Coll.	Comments
1	23	Latent	18 mo.	9-13-37 negative	12	5-23-38 negative	
2	30	Latent	2 yrs.	6-20-38 positive	8	10-3-38 negative	
3	37	Latent	3 yrs.	6-20-38 positive	10	10-3-38 positive	
4	38	Latent	11 mo.	6-20-38 positive	11	10-3-38 positive	
5	40	Latent	3 yrs. 5 mo.	3-28-38 doubtful	16	9-19-38 positive	
6	47	Latent	3 yrs. 7 mo.	5-16-38 positive	15	9-26-38 positive	
7	24	Latent	6 mo.	6-20-38 positive	11	10-3-38 negative	
8	26	Congenital	4 yrs. 4 mo.	3-21-38 positive	7	10-3-38 positive	
9	19	Latent	1 yr. 6 mo.	5-9-38 positive	12	9-2-38 positive	
10	26	Latent	1 yr. 9 mo.	5-23-38 positive	12	11-14-38 positive	
11	47	Latent	3 yr. 7 mo.	5-23-38 positive	15	10-3-38 positive	
12	36	Latent	6 mo.	6-20-38 positive	11	10-3-38 negative	
13	29	Latent	2 weeks	3-28-38 doubtful	11	10-24-38 doubtful	Patient had treatmens at C. C. H. before coming to our clinic
14	30	Latent	4 yrs. 11 mo.	2-14-38 positive	15	8-15-38 positive	
15	40	Latent	5 yrs. 11 mo.	6-6-38 positive	8	10-10-38 positive	
16	32	Latent	1 yr. 10 mo.	5-16-38 positive	12	9-11-38 positive	
17	38	Latent	4 yrs.	2-7-38 doubtful	12	6-20-38 positive	
18	20	Latent	2 yrs. 2 mo.	5-16-38 positive	10	8-29-38 positive	Secondary in 1935 — adequately treated
19	31	Latent	2 yrs. 4 mo.	6-3-38 positive	10	10-10-38 positive	
20	20	Secondary	3 mo.	4-4-38 doubtful	14	10-17-38 negative	Secondary syphilis in 1937

medicine, have received such laudation at one period, and so much vicious criticism at another. Undoubtedly, most of the criticism in the early days resulted from the manifestations of overdosage of the mercurial rather than from safe and optimum therapy. Overdosage invariably resulted in severe stomatitis, gingivitis, mercurial eruptions, kidney damage, and some fatalities. Hence, it is not surprising that strong prejudice developed against the use of mercury as an antisiphilitic drug.

Lomholt¹¹ has shown that the blood of a patient receiving mercury quickly reaches a point of saturation, and this saturation is not increased by further administration of greatly increased doses of this drug. This finding, as well as the experiences gained through hundreds of years of mercury therapy, is again bringing suitable mercury compounds to their definite place in the therapeutic armamentarium as antisiphilitic drugs. We believe that colloidal mercury-Hille deserves a definite place in the treatment of syphilis, particularly in latent stages.

The exact action of mercury in syphilis is not known. There are, at the present time, two accepted theories: first, that mercury acts directly, having action on the spirochaetes; second, that the drug acts indirectly as a "resistance builder" by increasing the power of the host's cells to destroy the organisms.

We wish to call attention to the following:

Antisiphilitic therapy should not be confined to one metal, either as bismuth or mercury, but that both metals should be employed if we are to obtain the best ultimate results. Our experience leads us to consider colloidal mercury-Hille as the mercurial of choice, particularly in latent syphilis.

The present day indications for the use of mercury in the treatment of syphilis are presented in an admirable manner by Levy-Bing¹² as follows:

1. In patients with syphilis who are intolerant to arsenicals and bismuth.
2. For an alternate drug in patients previously saturated with arsenic and bismuth.
3. In cases of syphilis resistant to arsenic and bismuth.
4. In cases of syphilis recurrent after arsenic and bismuth.
5. As an alternate drug in Wassermann-fast syphilis.

6. For the reinforcement of arsenic and bismuth in all types of syphilis.

7. In the treatment of ocular syphilis.

8. In the treatment of visceral syphilis.

9. In the treatment of central nervous system syphilis.

10. In the treatment of congenital syphilis.

The above indications clearly reveal the importance of the use of the proper mercurial in antisiphilitic therapy.

Colloidal mercury sulphide-Hille furnishes an ethical product which is potent, safe and effective.

CONCLUSIONS

1. Colloidal mercury sulphide-Hille is an effective anti-siphilitic drug, particularly in latent syphilis.

2. Colloidal mercury sulphide-Hille therapy resulted in an alteration in the serology from positive to negative in twenty-five per cent. of the patients in a series of Wassermann-fast cases.

3. A brief résumé of the value of mercury in the treatment of syphilis is presented.

4. We hope that these studies may stimulate further work with the use of mercury in sero-resistant syphilis.

BIBLIOGRAPHY

1. Lawless, T. K.: Arch. Derm. and Syph. 28: 475, 1933.
 2. Freeman, M. J.; Taylor, G. G., and White, Cleveland: Amer. Jour. of Syph. 15: 207, 1931.
 3. Wakerlin, G. E.: Arch. Derm. and Syph. 30: 49, 1934.
 4. Dubois, L. C.: Arch. Derm. and Syph. 36: 538, 1929.
 5. Pugh, W. S.: Arch. Derm. and Syph. 37: 697, 1930.
 6. Blech, G. M.: M. J. and Rec. 133: 394, 1931.
 7. Gennerich, W.: Arch. f. Dermat. u. Syph. 165: 209, 1932.
 8. Stokes, J. H.: Modern Clinical Syphilology—1934.
 9. Moore, J. E., and Padget, P.: Jour. A. M. A. 110: 96, 1938.
 10. O'Leary, P.: Jour. A. M. A. 110: 100, 1938.
 11. Lomholt, S.: Hand. d. Haut. u. Geschlechtskr. 18: 1, 1928.
 12. Levy-Bing, A., and Cartend, A.: Presse Med. 41: 671, 1933.
- 185 Wabash Ave.
25 E. Washington St.

THE RESULTS OF NEPHROPEXY

C. F. LEWIS, M. D.

and

PAUL L. SINGER, M. D.

CHICAGO

The main purpose of this paper is to add to the growing list of successful results following operations for nephroptosis, and to help put to rest the doubts that still linger in the minds of

*From the Dept. of Urology, Hillman Hospital, Birmingham, Ala.

general practitioners in regard to the efficacy of this simple operation. These doubts exist because when the operation first became known it was used indiscriminately, and too much has been expected of it without any care as to the proper selection of subjects.

Movable kidney of itself is asymptomatic and remains undiagnosed until some accidental examination by deep palpation makes its presence felt through abnormally low and sliding position of the kidney. The symptoms only appear when the ptosis interferes with the proper function of the urinary tract. Asymptomatic nephroptosis is a part of a general visceroptosis occurring in thin, asthenic individuals, and as such is found routinely in from 5 to 15% of all women, more often on the right side, and in 0.5 to 1% of all men. Only a small fraction of this number is in need of any corrective surgery, as only a small fraction of this total develops symptoms directly referable to the ptosed kidney. But in this small group there is a definite place for the use of nephropexy.

When the kidney in its pathologic descent drags on the fixed portion of the ureter it causes a kinking of the latter and thus interferes with the normal drainage of urine down the ureter, causing a retention of urine in the renal pelvis and that portion of the ureter that lies above the obstruction. The sudden stretching of the renal pelvis gives rise to a colicky pain of the nature of a Dietl's crisis, which passes off as the ailing patient lies down to relieve herself of the pain. The horizontal position relieves the kink and the urine can drain out. This process may be frequently repeated. If the kink is not very acute, there is a chronic retention of urine in the renal pelvis, which responds by gradual dilatation and slowly progressive hydronephrosis. This retained stagnant pelvic urine is a good culture medium for bacteria, and the ptotic individual is the victim of persistent and recurrent pyelitis. In some measure the greater frequency of pyelitis in women is partly traceable to poor urinary drainage.

The patient, then, comes to the physician with complaints referable to one of the above complications, such as pain, pyelitis, cystitis, frequency, burning and nocturia, and occasional hematuria. Occasionally the general neurasthenia that follows the chronic pain and urinary retention with mild blood retention of nitrogenous wastes

brings the patient under observation. The consequent medical advice of bed-rest will, of course, improve the symptoms because the horizontal posture causes straightening of the ureter and allows for proper drainage. But the patient cannot be permanently bedridden. Hence the suspicion of the presence of ptosis should be followed by a competent urologic checkup. This should include the blood urea nitrogen determination, cystoscopy, retrograde catheterism with determination of the renal pelvic residual, and pyelography in the upright position and with the ureteral catheters withdrawn to reveal the amount of sagging and dye retention that is present.

Pain in itself is not a paramount indication for nephropexy. The main index to operability is the amount of hydronephrosis present, the amount of infection present, and finally, the amount of pain that is relieved by the indwelling ureteral catheter or elevation of the foot of the bed. In the presence of considerable hydronephrosis, infection, and pain, the nephropexy is definitely justified and necessary. If not done early, the neglected condition would lead to a progressively larger hydronephrosis, pyonephrosis, and eventually to a nephrectomy. And in the presence of a marked kinking of the ureter, the fact that the operation will not relieve the pain should not be a deterrent to operation. The primary concern of the urologist is preventive, to avoid a later necessary nephrectomy. One could do away with many of the pelvic plastic operations by an early nephropexy.

One of the most persistent arguments against nephropexy has been the appearance of much pain some months postoperatively. This pain is due to the contracture of the fibrous tissue that now invests the kidney following the denudation of the renal capsule, and clamps down on the organ which is so variable in size depending on the vascularity at the time. This inelastic fibrous investing sheath prevents the distention of the organ with a resulting anginoid pain. The blame for this lies not in the operation but in the method used. The enthusiastic operator denudes too much kidney capsule, following the dictum of the early surgeons. Only enough capsule should be removed to ensure good adherence, and this surface is enough if three square centimeters of renal surface are exposed. If only this little is exposed, there will be no postoperative nephralgia.

A good test of whether surgery will be useful in the correction of nephroptosis appears in the diagnostic procedure of ureteral catheterism. If the release of retained urine from the renal pelvis brings about relief of pain and toxemia for a while, then the operation will be successful. And, likewise, if the wearing of a tight and well-fitting belt offers some relief (and not because of the strengthening of the sacro-iliac joint) then, again, surgery will be beneficial.

The type of operation is in itself unimportant. Probably the mere lumbar incision and slight scarification of the capsule would be sufficient. The sutures are merely useful in fixing the kidney until the adhesion can form. At this clinic the practice is of freeing the kidney and ureter entirely, incising the capsule along its convex border, and apposing the denuded window with cat-gut sutures to the lateral body wall after the lateral fat is removed. This is augmented by a

ribbon cat-gut suture at the lower pole which increases the angle of the kidney and facilitates the drainage of urine from the renal pelvis. This ribbon cat-gut is fixed to the body wall near the twelfth rib. Occasionally a fat pad is sutured under the lower pole of the kidney to serve as a hammock.

Postoperatively the patient should remain in bed with the foot of the bed elevated for ten to fourteen days, during which time she must not roll on to the well side. The elevation of the foot of the bed should be eighteen inches. A tight abdominal binder and thick pad under the binder on the operated side will help keep the organ elevated in the renal fossa until adhesions can form. After that the patient may gradually resume a normal life, but heavy work and straining should be avoided for three months. Some gain in weight at this time will also be useful, as now the depositing fat can only settle medial

No.	Sex	Age	Side	Preoperative Complaints				Postop. Complaints			Postoperative Pyelography	Postoperative Clinical Follow Up
				Pain	Fever	Pyelitis	Cystitis	Pain	Fever	Other		
1	F	38	R	++	+	++	0	0	0	0	Slight ptosis No kinking	No complaints
2	F	58	R	+	0	+	+	0	0	0	Good position	No complaints
3	F	36	R	++	0	+	+	+	0	0	Hydronephrosis slight degree	Pt. up first day at home
4	F	42	R	+	++	+	+	0	0	Wass 4+	Good position	Pain over sacro-iliac joint
5	M	29	R	+	0	0	0	0	0	0	Grand position	Epilepsy developed later
6	F	43	R	+	0	+	+	0	0	0	Good position	No complaints
7	F	41	R	+	0	0	+	0	0	0	Good position	No complaints
8	F	40	R	+	+	+	0	+	0	0	Good position	Pain in incision, skin tender
9	F	25	L	+	0	0	0	0	0	0	Good position	No complaints
10	F	54	R	++	+	+	++	+	0	0	Kidney ptosed as before	G. U. Symptoms disappeared; some left-sided pleurisy now
11	F	21	L	+	0	0	+	0	0	0	Good position	No complaints
12	F	43	R	+	+	+	0	0	0	0		Malaria lately, no G. U. complaints
13	F	41	R	+	++	+++	+	0	0	0		No. 9 bougie passed on right; Urine clear, no symptoms
14	F	25	R	+	+	+	+	0	0	0		Tubo-ovarian abscess drained; no G. U. com- plaints
15	F	37	R	++	+	0	+	0	0	0	Good position	No complaints
16	F	43	R	+	+	++	+	0	0	0		No complaints. Urine sterile.
17	F	42	R	+	+	+	+	0	0	0		No complaints
18	F	28	R	+	+	+	+	+	0	0		Salpingitis as present complaints. Some in- cisional pain
19	F	35	R	+	0	0	+	0	0	0		No complaints
20	F	32	R	+	+	+	+	0	0	0	Good position	No complaints
21	F	29	R	+	Blood 0	0	+	0	0	0		No complaints
22	F	44	R	+	+	+	+	0	0	0	Cardiac decompensation 3 mo. later, but no symptoms referable to K. U. B.	
23	F	34	R	+	Blood 0	+	+	0	0	0		Vaginal plastic operation 2 years later. No G. U. complaints
24	M	21	R	++	+	+	+	0	0	0		Contusion of eye 6 months later. No G. U. symptoms
25	F	33	R	+	0	0	+	+	0	0	Good position	No complaints
26	F	48	R	+	Blood		+	0	0	0		No complaints
27	F	41	R	+	0	0	0	0	0	0	Good position	No complaints
28	F	49	R	+	+	+	+	0	0	0	Good position No kink	No complaints
29	F	44	R	+	+	+	+	+	+	+	Good position. Ureter dilated	Pyelitis has persisted
30	F	35	R	++	0	0	+	0	0	0	Good position	No complaints

to the adherent kidney and will not loosen up the kidney.

The accompanying table shows the preoperative and postoperative complaints and results of nephropexy on 30 unselected and consecutive cases of nephroptosis performed at the Hillman Hospital.

Of the thirty cases, all complained of pain, 53% complained of fever and chills, 63% of pyuria from pyelitis as seen by the ureteral fractionally collected specimens, and 77% of some manifestation of cystitis. Only three cases, or 10% complained of pain alone of a very severe nature, causing incapacity, while four, 12%, complained of hematuria. In many cases there were a combination of symptoms.

Every patient was cystoscoped, separate urine specimens were collected from each kidney, ureteropyelograms were made in the prone and upright position, one plate immediately after the assumption of the upright position and another one six minutes afterwards to see the speed of emptying of the renal pelvis, routine fractional phenolsulphonphthalein test was done, and blood nitrogen content was determined. All cases showed various degrees of ptosis, various types of ureteral kinks, and all but three patients showed some degree of hydronephrosis. Upon the clinical checkup on the state of the kidneys, the patient was admitted to the ward for surgery. Gas anesthesia was routinely used.

Postoperative mortality, of course, was zero. No serious complications occurred, and none is to be expected. The only difficulty in some cases was abdominal distention, which was readily combated with the nasal tube and Wangensteen suction apparatus, turpentine stupes, repeated enemata, rectal tube, and pitressin. In no case did the distention persist for more than three days. The patient was kept in bed for three weeks.

Clinical follow up was done in all cases, and wherever indicated reexamination was done through cystoscopy and retrograde pyelography. Pain persisted in six cases, pyelitis persisted in one case, while recurrence of the ptosis was noted in three cases, of which one, a colored woman, did heavy labor the day she was released from the hospital, and another, a white woman, fell downstairs the first week she was at home. All three cases had some amelioration of the symptoms notwithstanding the recurrence of the ptosis.

Hence of the thirty cases there were two failures, giving a total successful result of 93 per cent., which is comparatively good for any type of operation or procedure where so many factors are involved and where there is not a removal of the organ in question.

SUMMARY

Thirty consecutive cases upon which nephropexy was performed six months to two years previous to the reexamination are classified to determine the end result of the procedure. Good results were found in 93 per cent. of the cases, failure was found in seven per cent., or two cases. It is our conclusion that nephropexy is definitely indicated in those cases of ptosis of the kidney that show some interference in the normal function of the excretion of the urine which results in pain, pyelitis, cystitis, hydronephrosis and hydro-ureter. The operation should be as simple as possible, should only denude a small section of the renal capsule, and should be followed by a careful postoperative routine. The surgical procedure is singularly free of mortality and morbidity.

185 North Wabash Avenue.

BIBLIOGRAPHY

- Billington, W.: The Therapeutic Value of Nephropexy, *Brit. Med. Jour.* 975-985, 1928.
 Burford, C. E.: Nephropexy for the Relief of Ureteral Kinks, Associated with Ptosis, *J. A. M. A.* 88: 541, 1927.
 Deming, C. L.: Nephroptosis, *J. A. M. A.* 95: 251, 1930.
 Emerson, C.: Nephropexy by Fascial Transplant., *Urol. and Cutan. Rev.* 24: 679, 1930.
 Foley, F. E. B.: Improved Methods for Nephropexy. *Arch. Surg.* 18: 1413, 1929.
 Hess, E.: Renal Sympathectomy *Jour. Urol.* 20: 333, 1928.
 Mathe, C. P.: Movable Kidney, *S. G. and O.* 40: 605, 1925.
 O'Connor, V. J.: Nephrolysis, Ureterolysis, and Nephropexy, *Arch. Surg.* 18: 1263, 1929.
 O'Connor, V. J.: The Value of Nephrolysis, Ureterolysis, and Nephropexy in selected patients, *J. A. M. A.* 93: 1114, 1929.
 Reaves, J. U.: Movable Kidney, *Urol. and Cutan. Rev.* 38: 709, 1934.
 Mathe, C. P.: Nephropexy, *S. G. and O.* 57: 538, 1933.
 Lewis, B. and Carroll G.: Clinical Evidence of the Question of Movable Kidney, *J. Urol.* 24: 479: 1930.
 Robertson, J. P. and Singer, P. L.: Nephropexy, *Am. J. Surg.* 42: 379, 1938.

ANCHORING THE ELUSIVE BREAST TUMOR

EARLE I. GREENE, M. D. and
J. MAJOR GREENE, M. D.

CHICAGO

Locating a small breast tumor after an incision is made often becomes one of the most aggravating and tedious surgical procedures,

*From the department of surgery, Northwestern University Medical School.

taxing the ingenuity of the most experienced surgeon. A small mass easily palpable before operation seems to disappear after the operation is begun. This is especially true when an attempt is made to remove such a nodule under local anesthesia. The mass apparently vanishes, and can be found only after considerable searching and manipulation. In order to do away with this "losing of the tumor" in the infiltrated field, we have made it a practice, in recent years, to remove all breast nodules under a general anesthetic. Notwithstanding this latter form of treatment we often meet with considerable difficulty in locating small tumors.

To simplify the operation, we have resorted to "anchoring" these masses. This is accomplished by passing a Hagedorn needle through the tumor mass. Since beginning this procedure the operation for removal of small breast tumors has become more simple.

TECHNIQUE

After isolating the tumor it is fixed between the index and middle fingers of the left hand. Without the use of an anesthetic, a cutting needle (Hagedorn) is passed into and through the mass. The patient experiences little or no pain as the needle plunges through the skin. Once the needle pierces the tumor it anchors it; after which the local injection follows. The usual skin incision is made alongside the needle. After undermining the skin, and with the fixation needle as the center, a wedge of tissue which includes the tumor is excised.

As the needle enters a solid tumor a definite sense of resistance is felt. As one passes through the neoplasm the resistance to the needle disappears. Likewise, when entering a small cyst, one will meet with moderate resistance as the wall is pierced; then a plunge into a cavity, followed by resistance again when the posterior wall is encountered. In this way we have been able to determine beforehand whether we were dealing with a solid or cystic mass. The only precaution we urge is not to introduce the needle too deeply. With a little care injury to the chest wall can be avoided.

We have had occasion to use this procedure seven times without fail. Four of the tumors were fibroadenomas, one a very small carcinoma, the others cysts. Each operation was completed in a minimum of time, requiring no searching, for we were always sure that the tumor was anchored by the needle. Frozen sections were ex-

amined immediately after the tissue was excised. 310 S. Michigan Ave.

CALCIUM THERAPY IN DISEASES OF THE CARDIOVASCULAR SYSTEM

EDWARD PODOLSKY, M. D.

BROOKLYN, N. Y.

About fifty years ago Ringer demonstrated experimentally in a striking way that sodium, calcium and potassium were essential for the contraction of the heart muscle. He found that when the concentration of potassium was increased in the solution in which the heart was immersed the contractions decreased, and if the concentration was further increased the contractions became weaker and weaker, the heart finally stopping in diastole and failing to respond to any further electrical stimulation. On the other hand if calcium was added to the solution, the response to stimulation reappeared and spontaneous contractions became stronger, the intervals between them lengthened and the heart finally stopped in a state of tonic contraction, a systolic standstill termed *calcium rigor*.

According to Barath, the first response to an intravenous injection of calcium is a well marked vagus stimulation with considerable slackening of the heart beat (the drop is from twelve to twenty-five, but sometimes as high as forty beats per minute) followed by a secondary weaker sympathetic stimulation. To the initial vagus stimulation must be attributed the results obtained by Wolffe and Bellet in paroxysmal tachycardia. In this condition, which is not only disagreeable to the patient, but may lead to very serious consequences, calcium by the intravenous route has proved a valuable remedy. Bellet reported a series of five cases in which results were very satisfactory. The tachycardia was controlled with dramatic effectiveness, both to the patient's delight and the doctor's surprise. Petsektakis several years previously had found that calcium in arrhythmia revealed the anxiety, the dyspnea and palpitation while it regularized the rhythm. He also found that the strength of systole was increased, the arterial blood pressure raised, and the rate slowed at the same time.

Heubner found that calcium increased the excitability of the heart, the action being on the ganglia in the ventricles. Stoppage in systole was the ultimate end when doses were increased. Pick expressed the belief that calcium and potas-

sium salts acted equally on all parts of the heart. Billigheimer found that calcium exerted on the heart a vagus stimulation which apparently did not exist when a tropine had been given.

Maneke showed that high calcium concentrations produced vasodilatation and increased the coronary circulation. This was confirmed by Hochrein. He also found that the calcium produced promoted heart circulation without causing additional strain on the heart by increased aortic pressure as occasioned by adrenalin, barium choride and lobelin. Turan confirmed the experiences of others with calcium as an agent which reduced the pulse in tachycardia (by 25 to 50 pulsations a minute).

The digitalis-like action of calcium has been noted by many investigators. Cheinisse was among the first to call attention to this fact. Lieberrman in his experimental work with calcium gluconate on dogs noted that arrhythmia, coupling of beats and symptoms of heart block and other digitalis-like effects quite often took place. These were after experimental doses, comparatively much higher than the doses that would be used in man to, and, with the use of the latter, the clinical effect is a synergistic action without toxic effects.

Singer obtained favorable results from a combined calcium and digitalis therapy in severe cases of decompensation and chronic cardiovascular diseases. Billigheimer confirmed these results. He also studied the effect of the lengthening of the pulse curve after the administration of digitalis and squill. He linked the action of digitalis with the calcium content of the tissues. In tetany where there is a hypocalcemia, tolerance to digitalis is low. In encephalitis where there is a hypercalcemia, it is high. This is explained by the action of calcium on cell permeability which allows the tissues and the heart muscle to take only small amounts of digitalis. Fisher who studied the mechanism of the digitalis-like action of calcium further found there was a difference between the action of digitalis and calcium. There is a unilateral synergism in that when digitalis is first given the heart is sensitized to calcium, while when calcium is first given, even in large doses, the heart is not made more sensitive to digitalis.

Singer is a very strong advocate of the conjoint use of digitalis and calcium in orthopnea with the threatening symptom of stasis, cardiac dropsy, myocardial weakness and the cardiorenal

syndrome. In chronic myocarditis he advises the use of digitalis and calcium in weekly alternance. Calcium, according to his experience, increases and quickens the effect of digitalis on the heart, but continued over a long period of time it lessens the effects of digitalis on the parasympathetic nervous system. Singer considers calcium "the whip and bridle of digitalis."

The relationship between calcium and strophanthus has also been noted. Loew found increase in systolic strength when calcium and strophanthus were given together. In the presence of calcium the contraction strengthening influence of strophanthus is very pronounced. Loew thinks that strophanthus sensitizes the heart to calcium, and on the basis of this observation states that the lack of influence of strophanthus in some cases of decompensation is conditioned weakened reaction ability of the myocardium to the physiological content of the blood. This weakened reaction ability is also the cause of decompensation. There is evidently a synergistic union between the calcium and the strophanthus which brings about the desired results.

Zondek found that calcium had an interesting effect in counteracting the paralyzing influence of chloral hydrate on the heart. He found that chloral hydrate not only influenced the cardiac muscle but also the cardiac ganglia and was led by this fact to study the action of calcium on these ganglia. Later he found that the action of calcium was similar to that of strophanthus but much quicker.

Vermel contributed some very interesting observations on the therapeutic effects of calcium salts in chronic cardiac affections, especially in those presenting more or less myocardial weakness. He used a method of intracutaneous injection which he believes preferable to all other modes of administration. His patients were suffering from myocarditis and subacute or chronic endocarditis with myocardial insufficiency, rapid pulse, dyspnea, cardiac dilatation, enlargement of the liver, etc. After ten to 15 treatments with calcium all the symptoms of decompensation usually disappeared as well as the dyspnea and unpleasant sensations in the region of the heart. The pulse became fuller and stronger. The heart sounds become more pronounced and the size of the liver decreased.

Calcium exerts a remarkable influence on patients with congestive heart failure according

to Steward. In a series of six cases he observed an increase in the output of urine following oral administration of calcium. The heart rhythm and contractions were also improved. Engelin found that calcium proved of benefit in all forms of circulatory weakness, manifesting itself by general fatigue and high excitability of the heart, all of which is more or less connected with vasomotor hyperirritability.

Klotz ascertained that in circulatory asthenia there was a disturbing of the potassium-calcium ratio, with acidosis, which was speedily corrected under calcium medication in conjunction with ultra-violet rays and increased vitamin intake. Korbusch saw a marked stimulation by calcium of the depressed heart in grippe and pneumonia. Kaffler and Kasper noted the same phenomenon in diphtheria where they used calcium to ward off impending circulatory weakness. Rosenow used high doses of calcium gluconate by mouth in pericarditis with good results.

Among the first to record his observations on the effect of calcium on hypertension was Addison who published results obtained in a series of 13 cases of arterial hypertension before and after the administration of large doses of calcium chloride. In the case of seven of these patients the blood pressure had been under observation for several months before the calcium chloride was given. In the other six patients it was ascertained a short time before the treatment began. In five cases albumin was previously present, and in four cases it disappeared after the calcium chloride. In three cases there was a low specific gravity of the urine and comparative calcium decrease. As the kidney function improved the calcium decreases also increased. The daily doses of calcium chloride amounted to 180 grains in three cases and to 57 grains in one case, and to 75 grains in another. In all cases the administration of calcium chloride was followed by a diminution of the blood pressure, systolic and diastolic, and usually the diminution was appreciable.

One year later, Addison and Clair reported a series of 45 patients whom they had been treating with calcium salts, the daily dose ranging from 90 to 180 grains, with blood pressure readings being taken weekly. Of the 45 patients thus treated 26 reacted well, with diminution in blood pressure and improvement in symptoms. A peculiar thing which they observed and which

they did attempt to explain was that better results were obtained with calcium therapy in the treatment of hypertension during the summer than winter months.

In 1927 Althow and O'Hare treated a series of eleven cases of hypertension with calcium chloride, one gm. and atropine 0.00025 gm. four times a day for from three to four weeks. In six of the cases it had no effect on the blood pressure. In the other it did exert an effect. Parathyroid extract was used in three cases with no apparent effect. Althow and O'Hare were not much impressed with calcium as a hypotensive.

Among the latest to study the role of calcium therapy in hypertension was Davis whose series consisted of 55 patients. He found that hypertension like fever may be intermittent, remittent, continuous or pernicious. Davis treated his patients with calcium lactate, eight grains in water, half an hour before meals, in addition to a low salt diet, low maintenance diet, with most of the protein from milk, moderate in total amount but adequate in all respects. This regime caused considerable subjective improvement in his patients with hypertension.

The first attempts at an experimental investigation of the way calcium acts on blood pressure were undertaken in 1920 by Krause. He found that there was a variable response of blood pressure to intravenous injections of calcium in warm-blooded animals such as rabbits and guinea pigs. The fall was more or less rapid depending on the rate or amount of the inflow and was strongest and fastest when the heart developed a tendency to stop in systole. Occasionally a slight increase in blood pressure was obtained when the calcium was injected into the blood stream; but the pressor action of calcium is of short duration. It generally begins immediately after the injection and lasts from ten to 20 minutes.

Among the latest and most interesting theories of high blood pressure is that offered by Stephens. He defines blood pressure as that pressure which is exerted on the blood by the tissues, especially on the contractile arteries. The greater the pressure of the blood and its corpuscles, the more handicapped are the movements of the corpuscles.

When a change is effected on the surface tension of the corpuscles, there is a modification

of their internal metabolism as a whole. It is now accepted that sixty per cent. of the body weight, excluding water, is composed of calcium. For that reason sixty per cent. of the body is therefore the metabolism of, and connected with, the calcium salts and their assortment into organic compounds and suitable ions. Increased blood basic pressure then is closely associated with calcium metabolism.

Kylin found that there was a shifting of the potassium-calcium quotient in favor of potassium in essential hypertension and was able, by calcium injections, to make good the calcium depletion and thereby lower the hypertension.

Other investigators also are of the opinion that calcium is most logically indicated in essential hypertension. They base their arguments on one or both of two premises: 1. Calcium is antagonistic towards guanidine. Guanidine is believed to be a very important factor in the pathogenesis of increased arterial tension, and the neutralization of this toxic substance by calcium paves the way for a removal of the tension. 2. Calcium has been known for quite a while to have a depressing effect upon sympathetic tonus and this is believed by many clinicians to be heightened in essential hypertension. Therefore, the administration of calcium which decreases the abnormal sympathetic tonus also depresses the hypertension.

2069 E. 23rd St.

CARDIAC REVIEW OF 1938

NATHAN FLAXMAN, M. D.

Instructor in Medicine, Loyola University Medical School
CHICAGO

1. SYMPTOMS AND SIGNS

In a plea for the early recognition of myocardiosis, Parsonnet¹ stated that dyspnea, palpitation, substernal distress, indigestion, and insomnia are the symptoms to seek in every patient of middle age. After testing the effects of induced oxygen want in patients with cardiac pain, Levy, Barach, and Bruenn² concluded that this is an important and apparently the determining factor in the causation of such pain, especially when the coronary flow of blood is reduced. Christie³ showed that though the conditions under which dyspnea occurs are various and manifold, it is usually reflex in origin and, in the forms of greatest clinical importance, is associated with pulmonary congestion. Clinical studies

by Johnston⁴ on a group of 21 patients showing systolic gallop rhythm confirmed the generally accepted opinion that extra sounds of this type usually occur in the absence of organic heart disease and that their only importance lies in the fact that they are occasionally mistaken for diastolic gallop sounds. Lewis and Dock⁵ stated that the heart sounds in diastole are due to tension of valve leaflets, with no appreciable muscular element. Stethographic records made by McKee⁶ on normal children indicated that splitting of the first or second heart tone and the presence of a third sound have no pathological significance. In children with congenital or acquired heart disease Wilson⁷ found that the physical signs may at times be inconstant and uncharacteristic in the presence of abnormality of the cardiac silhouette and chamber enlargement. Steuer and Fineberg⁸ followed up 33 children with apical systolic murmurs for more than ten years, and found that 27% developed serious valvular disease (chiefly mitral stenosis), 61% still had apical murmurs and nothing more, and 12% lost their murmurs entirely.

2. METHODS OF CARDIOVASCULAR EXAMINATION

1. *Electrocardiography*: Pardee and Price⁹ found agreement between the electrocardiographic diagnosis and the autopsy findings in 45 cases, 75% of the whole series, and the disagreement in 25%; it was greater when the electrocardiogram was abnormal (81%) than when it was normal (54%). The electrocardiographic and pathologic observations of mitral stenosis were correlated by Berliner and Master¹⁰ who found that associated lesions of other valves are the most important single factor affecting the electrocardiogram. Sigler¹¹ carried out electrocardiographic studies on the alteration of posture from the dorsal recumbent to standing and sitting positions, and in some, changes were so marked as to make the tracings appear abnormal and to lose its identity with those taken in other postures. Bellet and McMillan¹² studied the electrocardiographic patterns in acute pericarditis and concluded that invasion of the subepicardial portion of the myocardium by pericarditis is chiefly responsible for the deviation of the RST segment. A case of electrical alternans occurring in a patient with a pericardial effusion was reported by Feldman.¹³ The electrocardiographic test for "axis shift," as pointed out by France,¹⁴ is not of value in the antemortem

diagnosis of adhesive pericardio-mediastinitis. Bohning and Katz¹⁵ stated that atypical forms of electrocardiographic variations are in most cases associated with recent infarction due to slowly occluding sclerotic plaques, with extensive coronary sclerosis, but they are also seen (1) in cases in which the infarction of recent origin is superimposed on an old one, (2) in the presence of recent multiple small infarcts, or (3) in cases of recent infarction complicated by intraventricular block. Sodeman and Burch¹⁶ indicated that the occurrence of left axis deviation in a patient with a dropped heart does not necessarily mean cardiac hypertrophy. Langendorf and Pick¹⁷ concluded that leads from the extremities and from the thorax are complementary and that it is erroneous to think that the thoracic leads alone are sufficient for the diagnosis of myocardial infarcts. Stewart and Watson¹⁸ found that changes induced by digitalis in the form of the T-waves and R-T segments of the chest lead may resemble those resulting from coronary artery disease or recent coronary occlusion and lead to confusion in the interpretation of the record if it is not known that the drug has been given. Sprague and McGinn¹⁹ stated that inasmuch as the evidence from the apical chest lead may precede that from limb leads or may persist after the latter has disappeared, the precordial lead should be routinely taken in all cases of coronary disease. Edwards and Vander Veer²⁰ believe that for routine work, when only one precordial lead is taken, Lead IVR (apex and right arm) is the one of choice, provided that the heart is not appreciably enlarged; with moderate or marked cardiac enlargement, it seems preferable to place the precordial electrode medial to the apex and never further to the left than the anterior axillary line. Miller and Van Dellen²¹ noted that electrocardiographic studies indicate a definite effect upon the cardiac conductive system of the intravenous administration of magnesium sulphate. Beecher and Amidon²² found that the incidence of cardiac lesions demonstrable by clinical and electrocardiographic examination in 44 cases of trichinosis was 4.5%, the damage apparently being only temporary.

2. *Roentgenography*: Maguire²³ stated that in the presence of obesity, emphysema, and other complications, which render physical examination of the heart very imperfect, the roentgen

ray affords sometimes the only means of determining the size and shape of the heart. Epstein and Schwedel²⁴ found that cardioscopy is a satisfactory procedure for the qualitative estimation of the degree of enlargement of the individual heart chambers. Smith²⁵ classified the radiological features of pulmonary infarction as follows: (1) Vague clouding at the base of the lung, obscuring the costophrenic sinus, and suggesting basal pneumonitis of the influenzal type; (2) Shadows indicating an early effusion either concealing a very recent infarct or being superimposed later on obvious intrapulmonary shadows; (3) Localized shadowing not unlike that of lung abscess; (4) Density of greater or lesser extent, sometimes developing appearances indicating cavity formation, and consequently even suggesting pulmonary tuberculosis; and (5) Shadows at one base with ultimate elevation of the diaphragm indicating partial basal collapse. Mainland and Stewart²⁶ compared the normal percussion and radiography in locating the heart and mediastinal vessels and found a mean error of less than 1 cm. difference in most intercostal spaces between the percussion and the x-ray borders. Heidenreich and Joselevich²⁷ saw parapical x-ray shadows in the course of cardiac disease, and at necropsy found that the shadows were made by the accumulation of fat around the apex of the heart; the fat accumulates in the pleural space which is in contact with the pericardium and forms a shadow with smooth contours. Anglin²⁸ reported a case in which passive congestion of the lungs caused by mitral stenosis presented a radiographic picture closely resembling that of miliary tuberculosis.

3. *Other Methods*: Baer and Slipakoff²⁹ tried many of the agents used in measuring the circulation time and concluded that the test is an effective aid in the early diagnosis of heart failure and in the differentiation of cardiac from pulmonary or other diseases. Ascarelli³⁰ determined the velocity of the circulation and the basal metabolic rate of 58 patients who were suffering from heart disease and found that in decompensated heart diseases the velocity of the circulation diminishes and the BMR increases in proportion to the intensity of decompensation. Candel³¹ determined the normal circulation time from the antecubital veins to the pulmonary capillaries by a new technic; he gave an intravenous dose of 1.4 cc. of paraldehyde and a

cough reflex was obtained within a mean of six seconds in 96% of cases at the first attempt. Gorham and Thompson³² felt that no conclusion regarding the severity of the disease, the prognosis in a particular case, or the time when healing occurs can be drawn from the sedimentation rate at the present time. Wood and Jane-way³³ observed appreciable rapid increases in the volume of packed red blood cells, hemoglobin value, red blood cell count and plasma protein concentration for patients during recovery from severe congestive heart failure, probably indicating a decrease in the volume of plasma. Capani³⁴ stated that ketosis in decompensated heart diseases with edema depends on the diminished velocity of the circulation, and found the highest levels of ketonemia in the blood of patients who were in the preterminal state of decompensated heart disease with anasarca.

3. INCIDENCE OF HEART DISEASE

Crain and Missal³⁵ reported that of 278 cases of heart disease 61% were classified as coronary, 24% rheumatic, 12% hypertensive, and 3% miscellaneous; however, of the 169 cases classed as coronary, 112 had hypertension, so that the hypertensive etiology accounted for 52%. In a survey of etiologic factors in 306 patients dying with heart disease, Shelbourne³⁶ found as follows: hypertension, 40.6%; rheumatic, 13.8%; acute coronary, 10.9%; syphilitic, 10.5%; congenital, 2.6%; pulmonary, 1.8%; and tumors, 1.3%.

4. ETIOLOGY OF HEART DISEASE

1. *Congenital*: Gibson and Clifton³⁷ noted 105 (5.4%) cases of congenital heart disease in a review of 1,950 consecutive autopsies on children. O'Farrell³⁸ listed the following criteria as extremely helpful in the clinical diagnosis of congenital heart disease: a clear history of heart disease existing from birth or in infancy; murmurs heard at unusual situations; cyanosis; clubbing of the fingers and toes; dyspnea; developmental defects in other parts of the body; and juvenile hypertension. Eisenberg³⁹ stated that the simplest and most direct method of making the diagnosis in a suspected case of coarctation of the aorta during childhood is to feel for femoral pulsations; normally these are very easily found, but in the presence of coarctation the pulsations are absent or, at least, are difficult

to obtain. Parker and Dry⁴⁰ reported a case of coarctation of the aorta in which the site of stenosis was between the left common carotid and the left subclavian arteries; there was also a congenitally bicuspid aortic valve which was the site of a subacute vegetative endocarditis. Rooke⁴¹ stated that high blood pressure is an early and life-long finding in coarctation of the aorta. Hills⁴² reported the case of a 16-year old boy with a coarctation of the aorta and unequal blood pressure in the arms, high in the right and normal in the left arm. Rukstinat⁴³ cited the case of a three-day old infant with five major cardiac anomalies; aortic stenosis, atresia and adult coarctation of the aorta associated with a trilobulate heart. Rytand⁴⁴ indicated that the arterial hypertension which is present in the upper part of the body in coarctation of the aorta may not be explained upon the purely mechanical grounds of obstruction to the blood flow. Crawford and Warren⁴⁵ cited the occurrence of coronary thrombosis in a case of congenital dextrocardia with situs inversus where the pain appeared in the right arm. Garland⁴⁶ reported two cases of persistent right-sided aortic arch, one of which was correctly diagnosed only after surgical exploration, and the other was diagnosed from the roentgen examination alone. The 67-year old patient of Manchester and White⁴⁷ presented a congenital dextrocardia with situs inversus complicated by hypertensive and coronary heart disease; the electrocardiogram showed the effects of the various conditions. McGibbon⁴⁸ stated that right-sided aortic arch may be found in combination with a congenital malformation of the heart, notably the Tetralogy of Fallot, an example of which is described. Ingham and Willius⁴⁹ presented five cases of congenital transposition of the great arterial trunks, of which the youngest patient was 18 days old and the oldest lived seven months. Moll⁵⁰ reported a case of congenital heart block due to a suspected interventricular septal defect (*maladie de Roger*) in an 18-year old high school student who had no symptoms. Wilson⁵¹ cited a case of Chiari's network associated with a murmur resembling the bruit de Roger in a patient who died of hypertensive heart disease. Ingham⁵² stated that the diagnosis of paradoxical or crossed embolism is rarely made while the patient is alive; seven cases were reported, all of

whom had interatrial septal defects, but in only one were there signs or symptoms of congenital heart disease. Taussig, Harvey, and Follis⁵³ noted that the sequelae which are of such common occurrence as to be of diagnostic aid in interauricular septal defects are cardiac arrhythmias, superimposed rheumatic infections, pulmonary infections, paradoxical embolism, and freedom from subacute bacterial endocarditis. Davis⁵⁴ reported the occurrence of auricular flutter in a 41-year old female with congenital isolated dextrocardia. Volini and Flaxman⁵⁵ described an unusual case of the Tetralogy of Fallot in a laborer who lived to his 41st year, the second longest history in the literature; the cause of death was not due to any cardiac disturbance or dysfunction but to the uremic syndrome on the basis of chronic glomerulonephritis.

2. *Rheumatic*: Juster⁵⁶ studied the significance of rheumatic activity in chronic rheumatic heart disease and in some cases the process appeared to be either relatively quiescent or only slightly active; in others, periods of inactivity alternated with others of activity, and finally there were those in which activity of the rheumatic process was more or less continuous. Schlesinger⁵⁷ stated that rheumatic heart disease in childhood is likely to be serious, but on the whole the outlook is not unfavorable as many cases with every prospect of being left with severe cardiac lesions make remarkable recoveries. McKee⁵⁸ observed interesting differences in the apical diastolic murmur in children with rheumatic heart disease; the louder, longer murmurs occur in cases in which the heart disease is relatively severe, but when the disease is not so far advanced the short, early faint diastolic murmur may come and go from time to time during periods of apparent inactivity of the disease. Bland and Jones⁵⁹ stated that the early years after the onset of rheumatic fever, especially the first three years, have proved to be a critical period in regard to the effect on the heart. Gouley⁶⁰ discussed the probability that mitral stenosis in some patients is in itself not the sole or possibly even an important factor in the causation of the chronic right heart failure which characteristically terminates chronic rheumatic heart disease. Friedman and Lisa⁶¹ reported the outstanding feature of superimposed infection in rheumatic heart disease as acute

myocarditis, but other manifestations are acute and subacute bacterial endocarditis, "indeterminate," non-rheumatic or nonbacterial endocarditis, and possibly acute pericarditis. Boone and Levine⁶² stated that the occurrence of both rheumatic fever and chorea in the history was followed by a much higher incidence of valvular disease than following either disease alone, while that from rheumatic fever alone was about equal to that from repeated chorea alone. Allan and Baylor⁶³ recommended tonsillectomy in the treatment of rheumatic fever since rheumatic heart disease developed in only six of 49 rheumatic patients not having cardiac involvement at the time of operation. Mills⁶⁴ stated that since the rheumatic heart damage is permanent and recrudescence so common in northern cold and storms, it is definitely indicated that these unfortunate patients be taken to a subtropical climate where the calm warmth will allow the diseases to take a more benign course, and where the lowered general metabolic level will lessen the work load on the damaged heart. Usher⁶⁵ indicated that valvular heart diseases in cases of chorea is due not to chorea per se but to intercurrent attacks of polyarthritis or severe upper respiratory infections associated with infected tonsils.

3. *Bacterial*: Feldman and Trace⁶⁶ stated that from time to time cases of subacute bacterial endocarditis are seen that are caused by the extraction of septic teeth or the removal of infected tonsils. Williams⁶⁷ did not consider gonococcic endocarditis a rare disease since it was present in 26% of the patients with bacterial endocarditis (acute and subacute). Steiner and Walton⁶⁸ reported the case of a 17-year old woman who developed an acute cervicitis two weeks after exposure to gonorrhea and an endocarditis followed after an indefinite period: followed in turn by a bilateral parotitis and a terminal toxic jaundice; the blood culture was positive and the pulmonary valve was found to be involved at autopsy. Freund, Anderson and Lilly⁶⁹ described the case of a 30-year old female with mono-articular arthritis and endocervicitis who showed positive smears for gonorrhea and a cardiac picture of endocervicitis with three positive blood cultures of gonococci; hyperpyrexia, maintained close to 107 F., gave a successful result and she was well four months later.

Bonnet and Bonamour⁷⁰ stated that malignant endocarditis with slow evolution, appearing as a primary septicemia grafted on an old valvular lesion, can manifest itself in exceptional cases by a sudden dramatic visual disturbance. Krinsky and Merritt⁷¹ indicated that subacute bacterial endocarditis should be kept in mind as a diagnostic possibility when a young adult is admitted to the hospital complaining of drowsiness, severe headache, double vision, impairment of speech or sudden loss of consciousness, particularly when he shows cranial nerve palsies or a hemiplegia. Friedman⁷² studied the fibrin factor in its relation to subacute endocarditis and found that the fibrin mass, in which growing streptococci are embedded, had a striking inhibiting and retarding effect upon the bacteriocidal properties of three germicides tested. Meyer and Howell⁷³ reported a case proved bacteriologically and serologically to be one of infection with *B. paratyphosum* B; the outstanding pathologic changes were acute vegetative endocarditis of the aortic and mitral valves, superimposed on an old endocarditis. Levy and Singerman⁷⁴ described a case of subacute bacterial endocarditis of the mitral valve due to *Brucella melitensis*. Rueggsegger⁷⁵ stated that pneumococcal endocarditis usually occurs as a complication or sequel of pneumococcal pneumonia, runs an acute course, attacks especially the valves of the left side of the heart, is characterized by embolic phenomena and terminates in the majority of instances in purulent meningitis. Noran and Weisman⁷⁶ presented a case of staphylococcal pyemia which showed mainly rheumatic, some small bacterial, and some transitional forms of vegetations on the mitral valve; they suggested that vegetations of the rheumatic type may be produced by staphylococci. Miles and Gray⁷⁷ described two cases of infective endocarditis due to *Haemophilus para-influenzae* bacilli, but there was no difference in the clinical or pathological findings to distinguish the hearts from others with subacute "influenzal" or streptococcal endocarditis. Hoyt⁷⁸ reported three fatal cases of gonorrheal endocarditis, of which one had been treated with fever by means of diathermy, the second by general supportive measures, and the third with antistaphylococcal serum.

4. *Syphilitic*: Wile and Snow⁷⁹ found that in a group of patients with uncomplicated aortitis

54% of the cases had no symptoms referable to the cardiovascular system; when symptoms of a cardiac nature occur in a known syphilitic, most of these will already be found to have developed either aortic insufficiency or marked increase in aortic caliber which may be regarded as aneurysmal dilatation. Von Haam and Ogden⁸⁰ reported three cases of syphilitic gumma; the first was an isolated gummatous pericarditis; the second, a case of multiple gummas in the myocardium; and the third, a case of small gumma accompanied by extensive diffuse gummatous myocarditis and syphilitic endocarditis. Blackford and Smith⁸¹ stated that patients may die of syphilitic aortic insufficiency within four days of the first cardiac symptoms, or they may live at least thirteen years; such patients may die quickly, even though the x-ray shows a heart of normal size, or they may live for years with a huge heart.

5. *Thyrotoxic*: Ernstene⁸² reported that auricular fibrillation occurred in 207 of 1,000 consecutive cases of hyperthyroidism; in 96 of these, the arrhythmia was present before operation either in its continuous form or in paroxysms of variable duration, while in 111 it developed for the first time as a postoperative complication; the postoperative mortality was greater in patients who had auricular fibrillation either before or after operation than it was in individuals with normal cardiac rhythm. Gotta⁸³ stated that when a patient with hyperthyroidism has an enlarged cardiac area, it must be assumed that this is due to some other cardiovascular disease that is also present. Newman and Garland⁸⁴ recommended the x-ray and iodine therapy of hyperthyroidism because it results in 60% of cures as evidenced by disappearance of symptoms, economic restitution, a BMR of +10% or below, a basal pulse rate of 80 or below, and a gain of weight to the former average, all in from six weeks to three months.

6. *Myxedema*: Stewart, Deitrick, and Crane⁸⁵ stated that in the presence of myxedema the cardiac output per minute and per beat are diminished, the velocity of the blood flow slow, and the heart larger than normal for that individual at a time when the BMR is low, but the situation is completely reversible with the administration of thyroid extract. Smyth⁸⁶ reported a case of myxedema and angina pectoris in which

myocardial infarction developed during treatment with thyroid substance.

7. *Hypertension*: Weiss and Prusmack⁸⁷ studied the manifestations of essential hypertension and found that myocardial insufficiency accounted for 68.4% of the major complications, while cerebral vascular accidents occurred in 22% and 9.6% had uremia, with a similar distribution among white and colored patients. Mosenthal⁸⁸ defined essential idiopathic hypertension as a functional disorder, characterized by a progressively increasing elevation of both systolic and diastolic arterial pressure; the mechanical strain incidental to the hypertension often produces changes in the heart, and the arteries, especially those of the heart, the brain and the kidneys. Flaxman⁸⁹ followed the course of hypertensive heart disease in 127 patients with gross arteriosclerosis and found 84.3% were above 60 years of age, the "hypertensive age;" these patients were fortunate enough to live to develop gross arteriosclerosis; when congestive failure appeared, which was the cause of death in 71% of the deceased patients, the duration of life was short, less than six months in 77% of the deceased. Bordley and Eichna⁹⁰ stated that the diagnosis of "high blood pressure" is capable of arousing almost as much alarm as the diagnosis "cancer." Menninger⁹¹ suggested that physicians may definitely relieve hypertension by giving the patient a quiet, non-critical, sympathetic audience, with all reference to the degree of hypertension, its potential dangers, and its complications omitted from the conversation. Karsner⁹² felt that the observations in experimental animals and in man give no support to the view that essential hypertension is different from renal hypertension.

8. *Pulmonary*: Kaump and Dry⁹³ studied 13 cases in which there were varying degrees of diffuse pulmonary arteriolar sclerosis, and hypertrophy of the right heart was present in 11 of these cases; in seven cases the clinical picture, which was strikingly uniform in its evolution and final outcome, consisted essentially of dyspnea, which had been present for varying periods, and ended in a dramatic type of extreme congestive heart failure and cyanosis to which there was an entire lack of response to treatment. Love, Brugler, and Winslow⁹⁴ concluded that the changes in the electrocardiogram

observed after pulmonary embolization or infarction are due to dilatation of the right ventricle; these changes are depression of the S-T segment in one or more leads, most frequently in Lead 2, and often reversal of the T-waves in Lead 3 and the precordial lead. Seeley⁹⁵ reported a case of primary obliterative pulmonary arteriolar sclerosis in a 68-year old woman who had dyspnea and edema of one month's duration with a blood pressure of 160/110 and a polycythemia; she expired three days after hospital entry and at autopsy the heart weighed 390 grams with eccentric hypertrophy and dilatation of the right ventricle. Rothschild and Goldbloom⁹⁶ cited a case of obliterating pulmonary arteritis with secondary pulmonary changes and right ventricular hypertrophy in a 33-year old male. Golden⁹⁷ reported a case of acute cor pulmonale occurring 11 days postpartum in a 29-year old housewife; the outstanding symptoms were air hunger, a feeling of impending death, and substernal oppressive pain, while objectively she presented the characteristic symptoms of shock. Charr, Cohen, and Bettag⁹⁸ considered chronic myocardial degeneration in anthraco-silicosis to be due to the increased intrapulmonary pressure accompanying emphysema and the pulmonary arteriosclerosis commonly found in anthrasilicosis. Coggin, Griggs, and Stilson⁹⁹ found that if pneumoconiosis is uncomplicated by tuberculosis or other pulmonary infection death from cardiac failure is to be expected. Pilcher¹⁰⁰ reported four cases of slowly fatal pulmonary embolism, three postoperative, the cause of death being progressive heart failure of acute onset; in two of the patients embolectomy was attempted, but it was too late.

9. *Coronary*: Herrick¹⁰¹ catalogued 30 conditions which may be mistaken for acute coronary thrombosis, such as angina pectoris, certain arrhythmias, cardiac neurosis, malingering, pericarditis, disease of the aorta, pneumothorax, pleurisy, embolus in a pulmonary artery, herpes zoster, arthritis of the spine, abdominal disease, and diabetic catastrophes. Silberberg¹⁰² analyzed 335 cases of coronary occlusion, but found that averaged statistics are of little value when applied to individual cases. Eppinger and Kennedy¹⁰³ studied the causes of death in 200 autopsied cases of coronary thrombosis which showed that 32% of the patients died suddenly,

53.5% died of congestive heart failure, and 14.5% of other causes; in 107 patients dying of congestive heart failure, pulmonary embolism was the most important contributory cause of death in 35 (32.7%). Bean¹⁰⁴ noted that in acute cases of cardiac infarction without pain, the onset was frequently characterized by sudden accession of failure, less often by central nervous symptoms as syncope and weakness. Von Haam¹⁰⁵ encountered 749 cases of fatal organic heart disease in 5,213 consecutive autopsies; in 41 (5.4%) of the 749 cases death was due to coronary occlusion. Bean¹⁰⁶ found that congestive failure and shock followed in more than 50% of the acute attacks of cardiac infarction; the heart was enlarged in 83% of the cases, and the largest were found in hypertensives. Glomset¹⁰⁷ stated that the heart may "carry on" with three or even more occlusions of the coronary arteries, but infarcts require considerable time, even as long as 18 months, to heal completely. Wartman¹⁰⁸ described six cases of complete occlusion of sclerotic coronary arteries by intramural arterial hemorrhage without thrombosis; death was directly attributable to the coronary lesion in all cases although in three there was no myocardial infarction. Paterson¹⁰⁹ showed that, if proper conditions of stagnation and eddying of blood exist at a given point in the coronary system, capillary rupture with its sequelae occurring in the same region may precipitate thrombosis; capillary rupture may initiate thrombosis of a coronary artery by diffusion of blood from an intimal hemorrhage into the lumen, by necrosis or erosion of the intima from damage to its capillary circulation, or by retrograde capillary thrombosis. Feil, Cushing, and Hardesty¹¹⁰ reported that of 34 cases of recent myocardial infarction in which necropsy was performed, the clinical and electrocardiographic diagnosis was correct in 28 (82%). Halbersleben¹¹¹ reported a typical case of coronary occlusion, with autopsy, in a 28-year old white female. Lefkovits¹¹² found coronary artery disease twice as frequently in the hearts of diabetic as in the hearts of non-diabetic patients. Falla and Davidson¹¹³ reported the fatal occurrence of coronary thrombosis in a 25-year old white female while undergoing treatment for chronic pulmonary tuberculosis by bilateral artificial pneumothorax; she died 18 hours after a

refill. Master, Dack, and Jaffe¹¹⁴ analyzed 35 proved attacks of postoperative coronary artery occlusion in which they felt that previous coronary disease was probably present in every case; possible precipitating factors included surgical shock attended by a diminution in blood volume and a drop in blood pressure, tachycardia, dehydration and infection, but bed rest was not considered a factor. Stewart and Turner¹¹⁵ found pericardial involvement in 48 (80%) of 60 cases of coronary thrombosis examined at necropsy, but the process was localized in 75% of the 48 cases. Nichol¹¹⁶ reported a case of acute coronary thrombosis with massive pericardial effusion necessitating paracentesis in a 64-year old male. Reid¹¹⁷ stated that pressure on the brachial plexus (by cervical ribs, the scalenus anticus muscle, and tumors) may cause pain simulating either angina pectoris or coronary thrombosis. Schlesinger¹¹⁸ found, by an injection plus dissection study of coronary artery occlusion that anastomoses always develop readily whenever and wherever arteriosclerotic narrowing or occlusion causes obstruction in the coronary artery circulation; these anastomoses are localized to the regions where they are needed. Kountz and Smith¹¹⁹ found that in the hearts of patients who have died of heart failure the coronary blood flow is diminished either absolutely, as in diseases of the coronary arteries and in dilatation of the heart, or relatively, as in hypertrophy. Gorham and Martin¹²⁰ stated that in a group of 42 patients who had no pain in a fatal attack of coronary occlusion the males showed the peak mortality a decade earlier than the females, a history of preceding attacks of anginal pain and hypertension was not common, dyspnea was an outstanding symptom, and a pericardial friction rub was rarely heard. Wood, Wolferth, and Bellet¹²¹ indicated that in some patients with lateral infarction of the left ventricle there is very real danger of failing to recognize the fact that a coronary occlusion has occurred because these patients frequently have auricular fibrillation; digitalis action may produce a somewhat similar electrocardiogram, and the electrocardiographic signs of the lesion may disappear rapidly and completely. Baker and Willius¹²² noted that women are less susceptible to the development of coronary thrombosis than are men, and that when it does occur among women it tends to occur later in life.

10. MISCELLANEOUS

(a) *Trauma*: Robey¹²³ stated that the development of symptoms which is necessary to place the responsibility of cardiac damage on the injury from an industrial or compensation standpoint are in brief: an injury to a healthy person who was able to pursue his occupation previously; the development of cardiovascular symptoms that would aggravate an existing lesion or damage a normal heart; and the time between the injury and the onset of pain, dyspnea, and rapid or irregular pulse must be short. Barber¹²⁴ pointed out that direct violence to the chest wall may rupture the heart muscle, causing death, or may cause death without obvious heart injury; or it may give rise to the following clinical conditions: pericarditis, angina of effort, disorder of rhythm, lesion of a valve, or contusion of the heart muscle. Moritz and Atkins¹²⁵ stated that the pathologic characteristics of the scars of myocardial contusion and infarction are frequently identical, and the presumptive nature of their origin must be determined by historical data rather than by postmortem examination. Jones¹²⁶ cited the case of a 39-year old male operated upon 21 years ago for a stab-wound in the left ventricle (reported *Ann. Surg.*, 65:120, 1917); a laborer all the time, reexamination revealed no unusual findings. Bean¹²⁷ reported four cases of accidental injury to the heart by needle puncture, which suggested that intracardiac injection of adrenalin and paracentesis of the pericardium for effusion are sources of grave danger. Mason, Graham, and Bush¹²⁸ reported the case of a 29-year old male who suffered a stab-wound in the left supraclavicular fossa and an arteriovenous aneurysm of the left subclavian vessels resulted; he died on the fourth day from cardiac decompensation without surgical interference. Elkin¹²⁹ stated that the prognosis in wounds of the heart depends on the interval elapsing between the time of the injury and the institution of treatment, and on the postoperative complications, mainly infections. Neimann and Fitzgerald¹³⁰ reported the case of a 27-year old woman who, 16 months before her death, had jumped through a window and sustained what seemed to be a laceration of the chest wall but never completely recovered from this accident; seven months later she was treated for a pericardial effusion; in the fourth

month of a pregnancy she developed symptoms of a cardiac decompensation; after a spontaneous abortion she died, and at autopsy, a large piece of glass was found lying free in the right ventricle of the heart and extending through the tricuspid ostium into the right auricle.

(b) *Pregnancy*: Danforth¹³¹ stated that a woman with a cardiac murmur, whose heart is perfectly compensated, and who gives no history of recent decompensation, and who is carrying on the usual activities which make up the life of the married woman, will, in the great majority of cases, go through pregnancy and labor without any cardiac trouble. Turino and Anthony¹³² reported that the average length of labor in 110 cardiac patients, followed through 150 pregnancies, was not appreciably different from that in the non-cardiac patients; however, of eight mothers who died, five had no prenatal care. Hull and Hidden¹³³ noted the clinical picture of "toxic" postpartal heart disease to be that of congestive failure of moderate or extreme severity, the symptoms of which appear within a month after delivery in the majority of cases; in most of the 80 cases, heart failure apparently was not due to heart disease of the usual types but to factors that operated during pregnancy or shortly after its termination. Broustet and Mahon¹³⁴ stated that in a certain number of patients the cardiac insufficiency, which was already manifest during gestation, continues during the puerperal period; and that there are also women with cardiopathy who pass through pregnancy and delivery without trouble and in whom severe accidents develop during the postpartal period. Stander¹³⁵ reported a maternal mortality in unregistered cardiac patients of 26 times that in those who registered in the clinic during the prenatal period. Thomson, Cohen, and Hamilton¹³⁶ found that changes in the chest lead (anterior chest and left leg) during pregnancy, especially those in the T-wave, are of no particular value in the diagnosis of heart disease.

(c) *Nephritis*: Rubin and Rapoport¹³⁷ studied 55 cases of acute hemorrhagic nephritis in children and encountered severe myocardial damage in 14 of the patients; cardiac damage was an immediate danger to life during the acute stage, but the ultimate prognosis was good, as regards the heart. Garretton-Silva and co-workers¹³⁸ analyzed the cardiac disturbances in

36 cases of acute nephritis and concluded that vascular spasm, arterial hypertension, venous repletion and the infection causing the nephritis are factors responsible for the cardiac insufficiency. Feller and Hurevitz¹³⁹ considered two possibilities: (1) that acute nephritis is part of a widespread vascular disease which is occasionally severe enough to be called panarteriolitis, or (2) that many patients who seem to have acute nephritis with cardiac failure actually have panarteriolitis with involvement of the vessels of the myocardium.

(d) *Nutritional*: Waring¹⁴⁰ summarized 13 cases of nutritional heart disease in which the diagnosis was made on the cardiac enlargement without accompanying murmur, negative results of urinalyses, absence of sluggishness of reflexes, a history of a deficient diet, and more or less rapid response to rest and sufficient food. Goodhart and Jolliffe¹⁴¹ support the belief that beriberi in all its manifestations is found in alcohol addicts in this country; among 65 alcoholics with symptoms of dietary deficiency there was electrocardiographic evidence of cardiovascular disturbance in 47% and clinical evidence in 32.3%.

(e) *Diphtheria*: Leete¹⁴² has discontinued the use of adrenaline entirely in the cardiotoxic cases of diphtheria because he found that the drug increases the number of extrasystoles and decreases the cardiac efficiency. Burkhardt, Eggleston, and Smith¹⁴³ made serial electrocardiograms on 140 patients showing evidence of toxic diphtheria, and 28 showed changes in the tracings; complete inactivity was recommended for those showing the changes mentioned until the electrocardiogram has ample opportunity to return to normal.

(f) *Carbon Monoxide*: Stearns, Drinker, and Shaughnessy¹⁴⁴ found changes in the T-waves and in the S-T segment in the electrocardiograms of 22 cases of illuminating gas poisoning, but paroxysmal auricular fibrillation may occur also. Beck and Suter¹⁴⁵ stated the impression that unless the patient dies in acute asphyxiation from carbon monoxide no harm results is erroneous; patients who apparently recovered from acute asphyxiation frequently have later manifestations which appear in from three to seven days or even ultimately have severe organic heart disease.

(g) *Others*: Thienes and Butt¹⁴⁶ contend that experimental and clinical studies supporting the thesis that chronic tobacco or nicotine poisoning leads to degeneration of circulatory organs are poorly controlled and therefore of doubtful value. Hamburger¹⁴⁷ stated that conduction disturbances of the heart, although not frequent in influenza, occur both early and late in the course of the influenzal infection, perhaps somewhat more frequently during convalescence. Laird¹⁴⁸ investigated 65 cases of gall-bladder disease from which he gained the impression that infection of the gall-bladder is a definite etiological factor in the production of myocardial lesions commonly found in these cases, and that the presence of obesity, though almost certainly a factor in these cases, does not always explain the cardiac damage. Courville and Mason¹⁴⁹ observed 24 patients with acromegaly, of which 18 (75%) presented evidence of marked heart failure, and six died of the failure. Clark¹⁵⁰ presented a case of serum carditis in a 20-year-old male with acute anterior poliomyelitis who died 12 days after the onset of the disease from serum sickness. Blumer and Nesbit¹⁵¹ cited the case of hemochromatosis in a 54-year-old male with degeneration of the heart muscle who died from congestive heart failure. Segal¹⁵² found that cigarette smoking produces definite changes in the electrocardiogram, mainly an increase in the heart rate and a lowering of the T-wave; these effects occur mainly in people under 50 years of age.

5. PATHOLOGY

Myocardial: Parkinson, Bedford, and Thomson¹⁵³ stated that cardiac aneurysms, which involve the left ventricle almost exclusively, are usually due to coronary occlusion with resultant infarction, and rarely to syphilis, infective endocarditis, congenital defects, or trauma; significant clinical features are a history of coronary thrombosis, enlargement of the heart to the left, a normal or low blood pressure, distant heart sounds, and an electrocardiogram often indicative of anterior infarction (Ti type). Ball¹⁵⁴ suggested that the best way to prevent the formation of a cardiac aneurysm in a patient who has suffered an acute coronary occlusion is to keep him in bed at complete rest for at least six to eight weeks, with careful restriction of activities, both physical and emotional, for some

time thereafter. Davidson¹⁵⁵ reported a case in which an epithelial cyst was an incidental finding in the left ventricle of a 64-year-old woman. Bennett, Konigsberg, and Dublin¹⁵⁶ described a case in which a primary tumor in the left auricle of the heart produced an unusual cardiac shadow in the x-ray; it was first thought to be an abnormality of the pulmonary conus or artery. Larson and Sheppard¹⁵⁷ reported a case of primary rhabdomyoma of the heart with sarcomatous extensions; the tumor, not diagnosed during life as it showed no symptoms, was on the lateral wall of the left auricle and hung down through the mitral valve into the left ventricle. Kaplan, Clark, and De La Chapelle¹⁵⁸ studied 42 cases of myocardial hypertrophy of uncertain origin, all associated with congestive heart failure; antecedent hypertension played a part in a third of these cases, and although it could not be excluded as a factor, its absence in the majority of other cases appeared probable. Strouse¹⁵⁹ reported a case of primary benign tumor of the heart, a myxoma of the right auricle, of 43 years' duration in a man who died at 63 from a rupture of the colon due to carcinoma.

Endocardial and Valvular: Willius and Dry¹⁶⁰ feel it is important to recall the fact that calcareous aortic stenosis may be existent many years before the advent of failure, but when signs of failure supervene the response to treatment is disappointing and death occurs in a short time. Clawson, Noble, and Lufkin¹⁶¹ stated that the calcified nodular deformity of the aortic valve with stenosis is a clinical type frequently not diagnosed because of the common occurrence of sudden death and the lack of constancy of clinical symptoms. Berk and Dinnerstein¹⁶² studied 14 cases of calcific aortic stenosis and found that in certain cases of aortic regurgitation in which there are electrocardiographic findings of myocardial damage and no evidence of syphilitic or rheumatic heart disease, a proper x-ray examination may reveal characteristic depositions in the aortic valves. Lesnick and Schlesinger¹⁶³ stated that calcareous aortic valve stenosis is not always rheumatic in origin; in some cases the etiology of the lesion is probably in the nature of an arteriosclerotic degeneration. Friedewald and Ewing¹⁶⁴ studied 72 cases of isolated aortic stenosis found in 22,123 consecutive autopsies; the etiology seemed

impossible to decide with certainty, and although arteriosclerosis was the usual course, the isolated calcific aortic stenosis could also result from an inflammatory process and in some case from both. De Veer¹⁶⁵ attempted to explain sudden death in aortic stenosis on the basis of a free cusp locking under the margin of the fused cusps during life, as demonstrated in one case of a 59-year-old male with this lesion who expired suddenly. Wainwright¹⁶⁶ reported two cases of intracardiac tumors, one involving the left side of the heart and the other the right; in one the tumor arose in the lung and entered the left side of the heart via the pulmonary vein; in the other a uterine tumor had reached the heart by prolongation through the inferior vena cava and entered the right side of the heart; in both instances, the tumor, unattached to the endocardium, extended through the A-V valve, seriously interfering with its function; in one case the classical signs of mitral stenosis were produced, while in the other the signs were interpreted as those of mitral insufficiency.

Pericardial: Stewart, Crane, and Deitrick¹⁶⁷ studied the circulation in pericardial effusion and found that the decrease in cardiac output is due for the most part to interference with the inflow of blood into the right heart, and contraction may also be impaired; increase in the amount of pericardial fluid is associated with progressive decrease in cardiac output and rise in venous pressure; the venous pressure falls rapidly at first, and then slowly, to a normal level as fluid is removed from the pericardial cavity. Burwell and Blalock¹⁶⁸ stated that chronic constrictive pericarditis is a disorder of the circulation characterized by striking and long-standing venous engorgement, by enlargement of the liver, by ascites, by weakness, and sometimes by edema. Stewart and his coworkers¹⁶⁹ found that chronic constrictive pericarditis is usually associated with a decrease in cardiac output, elevation of venous pressure, prolonged circulation time, and an increase in size and caliber of the peripheral venous chambers; after operation, in those cured, the measurements assumed normal limits. Lawrence and Morton¹⁷⁰ reported successful partial resection of the pericardium in two patients with chronic constrictive pericarditis. Stewart, Crane, and Deitrick¹⁷¹ studied absorption from the pericardial cavity in man

and found the pericardial fluid similar to blood serum in a patient with an effusion; for this reason the fluid could not readily pass through the subepicardial vessels into the blood stream, for the two systems (blood and pericardial fluid) were approximately in equilibrium. Southworth and Stevenson¹⁷² described a patient showing congenital absence of the left leaf of the parietal pericardium, with an intrapleural window in the upper portion of the anterior mediastinum. Dick¹⁷³ reported a case of an endothelioma of the pericardium in a 21-year-old male, ill seven months, and who had physical and x-ray evidence of a pericardial effusion. Boman¹⁷⁴ cited a case of primary sarcoma of the pericardium in a 27-year-old male in whom the physical and x-ray findings supported a diagnosis of pericarditis. Spear¹⁷⁵ reported five cases of fibrinous pericarditis following thyroidectomy. Stofor¹⁷⁶ described a case of tularemia of the ulceroglandular type in a 29-year-old female in whom pericarditis with effusion appeared as a complication; the patient made a complete recovery.

Vascular: Weiss¹⁷⁷ reported two cases of dissecting aneurysm of the aorta with unusual features; in the first case the dissection invaded the root of the aorta as well as the first portion of the left coronary artery and this ischemia resulted in acute myocardial infarction; in the second case the patient suffered from hypertension and syphilis, and an old syphilitic aneurysm of the arch of the aorta coexisted with the acute dissecting aneurysm originating near the opening of the syphilitic aneurysm. Hamburger and Ferris¹⁷⁸ noted that pain was not a prominent symptom in four of their six cases of dissecting aortic aneurysm; four patients lost consciousness at the onset and all complained of weakness and dizziness. Collins and D'Alessio¹⁷⁹ reported a case of traumatic rupture of the thoracic aorta in a 73-year-old man who was struck by an auto. Claiborne and Holler¹⁸⁰ cited the case of a dissecting aneurysm of the aorta in a 45-year-old colored male with a blood pressure of 270/160 who lived 53 days after the initial onset. Delp and Maxwell¹⁸¹ reported a case of rupture of an aortic aneurysm into the pulmonary artery, which created an arteriovenous aneurysm with physical findings similar to congenital heart disease. Regester and Innes¹⁸² recorded a case with

autopsy of a congenital stenosis (adult type of coarctation) of the arch of the aorta in a 19-year-old female, with death caused by a spontaneous rupture of the ascending portion of the aorta and resulting hemopericardium. Freedman, Higley, and Hauser¹⁸³ stated that a saccular aortic aneurysm may develop in the course of a few weeks and by its rapid increase may suggest the presence of a malignant mediastinal neoplasm. Parks¹⁸⁴ reported three cases of aneurysm of the innominate artery and stated that the presence of a pulsating tumor above the episternal notch should make one suspicious of this aneurysm. Blakemore and King¹⁸⁵ believe that a thoroughly clotted aneurysm may be inactivated indefinitely; their method of clotting saccular and fusiform aneurysms by electhermic coagulation is safe and efficient. Kampmeier,¹⁸⁶ in a clinical study of 633 cases of saccular aneurysm of the thoracic aorta, noted that the chief complaints were pain, dyspnea, and cough; and the common causes of death were rupture of the aneurysm and respiratory obstruction.

6. FUNCTIONAL DISORDERS

Congestive Failure, Including the Use of Digitalis and Diuretics: Sodeman and Burch¹⁸⁷ studied 100 cases of congestive heart failure and noted that the precipitation of the failure by a factor putting a strain on the heart acts as a forewarning of the existence of lowered cardiac reserve, so that with treatment and adaptation the patient's life may be prolonged. McMichael¹⁸⁸ found that the more significant facts of cardiac behavior in congestive failure are a diminution of the ability of the heart to respond to venous pressure increments, and the occurrence of venous congestion as a possible compensating mechanism and not as a passive phenomenon dependent on diminution of cardiac output. Altschule¹⁸⁹ stated that the fundamental defect in the pathological physiology of chronic cardiac decompensation is a cardiac output which, in relation to the metabolic requirements of the body and to the venous return, is abnormally lowered. Williams and Rainey¹⁹⁰ studied the causes of death in patients with congestive heart failure and noted that the duration of life after the onset of congestive symptoms has been distinctly prolonged in recent years due to the better control of edema largely by the intensive use of mercurial and

xanthine diuretics. Davis¹⁹¹ discussed the role of rest and exercise in congestive heart failure but found no data to support the contention that exercise improves the capacity of the heart in the convalescent stage. The studies of Stewart and his coworkers¹⁹² yielded additional evidence that a decrease in cardiac output which follows the giving of digitalis to human beings (normal and those having organic heart disease without congestive heart failure) is not a consequence of diminished venous return but a consequence of a decrease in the size of the heart due to the action of digitalis on it. McGuigan¹⁹³ found good physiologic and pharmacologic reasons why we should not always expect benefit from digitalis in infectious fevers; digitalis at higher temperatures is somewhat more toxic, but the increase in toxicity is not enormous. Stewart and his coworkers¹⁹⁴ stated that digitalis has the same action on the normal as on the pathologic heart: it decreases the cardiac size which we interpret as an effect on tone. Allen¹⁹⁵ reported a case of accidental digitalis poisoning in a three-year-old child who developed vomiting and diarrhea within six hours and a slow pulse in 24 hours; the child recovered fully. Dry and Koelsche¹⁹⁶ reported a case in which too large a dosage of digitalis caused complete A-V dissociation; but despite profound electrocardiographic changes systemic toxic effects were entirely absent. Schulze¹⁹⁷ pointed out that the anatomic lesions in the cardiac muscle which are produced by the toxic doses of digitalis are the cause of the increased sensitivity to further medication with digitalis. Travell, Gold, and Modell¹⁹⁸ concluded, from facts indicated, that increased susceptibility to digitalis in cardiac infarction may be due to a change in the properties not of the whole heart but of an area with impaired circulation within the zone of the infarct. Gold et al¹⁹⁹ indicated that in cases of angina pectoris without congestion the likelihood is negligible that the use of digitalis will, by a direct action on the circulation, increase or diminish cardiac pain. Tincture of digitalis, according to Van Liere and Sleeth,²⁰⁰ may be given immediately before or directly after a meal without any deleterious effect on gastric motility. Nylin²⁰¹ stated that in cases of considerable cardiac insufficiency the standard metabolism has been found to be appreciably increased; in cases without cirrhosis of

the liver, digitalis in large doses gives rise to a momentary increase in the standard metabolism and the blood pressure, and a reduction in the heart rate, followed later by a considerable reduction in standard metabolism and blood pressure. Gouley and Soloff²⁰² reported two pertinent cases in which serious digitalis poisoning manifested itself by cardiac arrhythmias, namely, nodal and ventricular tachycardia and A-V dissociation, and these disturbances continued despite the withdrawal of the drug, probably due to spontaneous redigitalization.

Golden and Brams²⁰³ advised great caution in giving intravenous calcium with or shortly after digitalis, if absolutely necessary to give at all, since the margin of safety is narrow and the severe toxic effects cannot be foreseen or treated. McGuigan and Higgins²⁰⁴ found that calcium salts affect the heart in the same manner as digitalis, and their action is additive and dangerous. Flexner²⁰⁵ used mercurin suppositories as a diuretic and in 85% a diuresis ranging from 1,950 to 8,750 cc. resulted in 24 hours. Caughey²⁰⁶ gave mercurial diuretics by rectal suppository (mercurin) over a prolonged period to two patients; 51 were given to one and 35 to the other without symptoms of rectal irritation. Alsever and Levine²⁰⁷ studied the immediate effect of a mercurial diuretic on the respiratory mechanism and found that the average increase in the vital capacity of the lungs 24 hours after the injection was 290 cc., accompanied by a prompt improvement in subjective symptoms of respiratory distress and a decrease in the signs of pulmonary congestion. De Graff, Batterman, and Lehman²⁰⁸ demonstrated the superiority of mercurial diuretics combined with theophylline in producing diuresis, in decreasing local toxicity, and in increasing the rate of absorption. Hines²⁰⁹ study of the effects of diuresis by mercurials on the clinical course of congestive heart failure suggests a decrease in the duration of life after their use due to a high incidence of uremia in a series of patients with hypertensive and arteriosclerotic heart disease. Volini and Levitt²¹⁰ found esidrone a very effective mercurial diuretic, non-toxic in a therapeutic dosage under proper indications. Evans²¹¹ reported that vitamin C increased the urinary output in each of eight patients with heart failure; an adequate amount of lemon and orange juice will provide this. In

treatment the deduction would be that all the tried measures employed in the salvage of the cardiopath are logical and advisable, but Gordon and Cohen²¹² caution against too prolonged and potent digitalis administration and too sudden and severe diuresis, as each of these procedures has been followed by the onset of a psychical storm.

Angina Pectoris: Levine²¹³ stated that angina pectoris is a useful term, but should be confined to designate patients suffering from a peculiar type of distress in the chest or neighboring structures who are liable to sudden, unexpected death; the diagnosis depends almost entirely on the proper interpretation of symptoms, and for this reason, direct inquiry is often necessary to avoid overlooking many cases. However, Bourne and Scott²¹⁴ stated that angina of effort is not a dangerous symptom in itself and patients do not die in the attack; danger is only to be apprehended from the occasional occurrence of coronary thrombosis, from the results of coronary atheroma on the ventricular muscle, or other vascular accidents. Graybiel, Starr, and White²¹⁵ suggested that in those occasional instances where attacks of angina pectoris are precipitated by smoking ("tobacco angina") the attacks are not the result of coronary vasoconstriction but the result of a sudden increase in the work of the heart as shown by the increase in blood pressure, or heart rate, or both. Robertson and Katz²¹⁶ developed a method, which consists of producing five-minute ischemia in the left arm by raising the pressure in a blood-pressure cuff to 50 mm. Hg. above systolic pressure, for inducing an anginal attack in susceptible patients with their permission. Shapiro and Smyth²¹⁷ noted transient electrocardiographic changes during attacks of angina pectoris which were characteristic of acute coronary occlusion with the exception of their transient nature. Starr and his coworkers²¹⁸ estimated, by various methods, the work of the heart during and between attacks of angina pectoris and found it was significantly greater during the pain than when the patients were free from it; these results are consistent with the widely accepted view that cardiac pain is caused by situations demanding increased cardiac work when the heart's blood supply cannot be increased correspondingly. Missal²¹⁹ discussed methods of comparing electrocardiographic tracings after

rest, immediately after a measured amount of exercise, and at successive intervals after the exercise for obtaining objective evidence of myocardial ischemia (angina pectoris), where the diagnosis otherwise would rest solely upon a more or less ambiguous history. Edeiken and Rose²²⁰ reported the case of a 45-year-old woman who suffered repeated attacks of anginoid pain and also presented electrocardiographic abnormalities, hypercholesteremia, and a large intrathoracic goiter in the proximity of the aortic arch; subtotal thyroidectomy was followed by marked reduction in the frequency and severity of the attacks and eventually by their disappearance and the return of the electrocardiogram to normal. Gallavardin²²¹ stated that it is even possible certain hypertensive states provoke, especially in women, the appearance of an anginal syndrome which does not depend on coronary lesions. Wasch and Schenck²²² gave 65 patients with angina pectoris, not relieved by ordinary medical therapy, 2-12 series of high voltage roentgen therapy to the cervicodorsal and adjacent paravertebral region for relief of pain; 44 (67.7%) were improved, as indicated by reduction in the number, severity, and duration of these attacks.

Paroxysmal Tachycardia, etc.: Dozzi²²³ reported a case of transient nodal rhythm following the use of sulphanilamide. Stewart and his coworkers²²⁴ noted that the rapid regular and irregular rhythms in human beings are associated with a marked decrease in functional capacity of the heart, as measured by cardiac output per minute and per beat and the work of the heart. Coleman and Bennett²²⁵ injected the right stellate ganglion with alcohol in a 46-year-old female who had attacks of paroxysmal tachycardia of the supraventricular type for 20 years; an apparent cure resulted. Sigler²²⁶ reported a case of Adams-Stokes syndrome induced by transient recurrent ventricular fibrillation; attacks occurred at intervals of about seven days and recurred as often as 20 times a day. Bain's²²⁷ patient, a 75-year old male, had nodal rhythm with retrograde heart block and reciprocal rhythm following a paroxysm of auricular flutter; the term was first used by Drury (1924) in a case of nodal tachycardia to describe a mechanism of the heart in which a single impulse from the A-V node gives rise to two ventricular contractions. Bernstein²²⁸ reported a case of complete A-V dis-

sociation following scarlet fever; the 18-year old boy, still under observation, had a complete heart block and cardiac decompensation.

Auricular Fibrillation and Flutter: Sussman and Woodruff²²⁹ analyzed the records of 96 cases of auricular fibrillation which had been studied by adequate roentgenologic or postmortem examination and confirmed the current impression that the size of the left auricle is not directly related to the presence of the fibrillation. Levy and Boas²³⁰ in a comparative study of the actions of gitalin made in 36 ambulant patients with auricular fibrillation, found that the effects, maintenance, and toxic reactions are the same as for digitalis. Rothstadt²³¹ indicated that the prognosis in hypertension with paroxysmal auricular fibrillation is better than in hypertension with established fibrillation, other things being equal. Rosenblatt²³² observed the first instance of paroxysmal auricular fibrillation in a 55-year old male with pulmonary tuberculosis of 20 years' duration in which the only pathological condition found at autopsy was hypertrophy and dilatation of the right side of the heart. Dittler and McGavack²³³ reported a case of acute pancreatic necrosis presenting pure auricular fibrillation and flutter which simulated coronary thrombosis; autopsy failed to disclose any organic changes in the heart to account for the arrhythmia which was probably initiated by reflexes originating within the abdomen.

Heart-Block: Master, Dack, and Jaffe²³⁴ found intraventricular block, including bundle branch block, in 15% of 375 cases of acute coronary occlusion; congestive heart failure (92%), antecedent hypertension (77%), cardiac enlargement (84%) and evidence of previous attacks were the rule; the presence of defective conduction in coronary occlusion adds to the seriousness of the prognosis, the mortality rate being 42%. Flaxman²³⁵ noted bundle branch block graphically in 36 (4.58%) of 786 patients with hypertensive heart disease, but it appeared to have no definite diagnostic or prognostic significance in these patients; the prognosis of the hypertensive patient with bundle branch block was that of the underlying heart condition, particularly in relation to the occurrence of congestive heart failure. Comeau, Hamilton, and White²³⁶ concluded that paroxysmal bundle branch block (without a very short P-R interval)

is as a rule a sign of serious heart disease, most often due to coronary sclerosis, but in some cases associated with rheumatic heart disease, diphtheria, and factors that cannot be clinically ascertained. Yater²³⁷ stated that bundle branch block is usually due to coronary arterial disease, either rheumatic or degenerative, or to hypertension resulting in left ventricular strain and impaired nutrition of the endocardium and the bundle branch. Gertz and coworkers²³⁸ reported a case of cardiac syncope due to paroxysms of ventricular flutter, fibrillation and asystole in a patient with varying degrees of A-V and intra-ventricular block. Yater²³⁹ found that bundle branch block is usually associated with bilateral branch lesions, although one branch is usually more seriously affected than the other and probably usually determines the essential form of the electrocardiographic curve. Cutts and Roberts²⁴⁰ reported the case of a 65-year old male who had the unique combination of auricular flutter and 2:1 and 3:1 left bundle branch block. Master, Dack, and Jaffe²⁴¹ noted partial and complete heart block in 3.2% of 375 cases of acute coronary artery occlusion; the heart block appeared soon after the onset of the occlusion and usually lasted one to two weeks; it was associated with heart failure, cardiac enlargement, previous hypertension, and previous coronary occlusion. Bishop²⁴² reported a case of transient, recurrent, complete left bundle branch block in a 68 year old male who continues to lead an active life and only of late has had slight symptoms. Andersen²⁴³ reported a case of complete A-V block, in a man aged 20, which disappeared after two days' treatment with atropine. Digilio²⁴⁴ cited the case of a 29-year old female who presented an illustration of a true reversible bundle branch block because of a gradual change in the electrocardiographic picture following thyroidectomy rather than an abrupt reversion to a normal rhythm. Dubbs²⁴⁵ reported a case of transitory complete heart block in a 72-year old male; the evidence suggests that coronary arteriosclerosis plays a major etiological role in this disease, but, with the exception of a few cases in which a vagal reflex seemed to be the precipitating factor, the immediate cause of the recurrent heart-block and of the ventricular asystole which is responsible for the Adams-Stokes syndrome is not known. Lueth²⁴⁶ gave metrazol to four patients

with complete heart-block and the Adams-Stokes syndrome; two of them were greatly benefited and two were not; apparently the action of the metrazol is on the vasomotor and respiratory centers, not on the heart.

3507 Lawrence Avenue.

BIBLIOGRAPHY

1. Ann. Int. Med. 11: 2133, 1938.
2. Am. Heart J. 15: 187, 1938.
3. Quart. J. Med. 7: 421, 1938.
4. Am. Heart J. 15: 221, 1938.
5. J. A. M. A. 110: 271, 1938.
6. Am. Heart J. 16: 79, 1938.
7. J. A. M. A. 110: 501, 1938.
8. Am. Heart J. 16: 351, 1938.
9. Ibid, 15: 28, 1938.
10. Arch. Int. Med. 61: 39, 1938.
11. Am. Heart J. 15: 146, 1938.
12. Arch. Int. Med. 61: 381, 1938.
13. Am. Heart J. 15: 100, 1938.
14. Bull. Johns Hop. Hosp. 63: 104, 1938.
15. Arch. Int. Med. 61: 241, 1938.
16. Am. Heart J. 15: 490, 1938.
17. Acta Med. Scandinavia, 96: 80, 1938.
18. Am. Heart J. 15: 604, 1938.
19. New England J. M. 218: 555, 1938.
20. Am. Heart J. 16: 431, 1938.
21. J. Lab. and Clin. Med. 23: 914, 1938.
22. Am. Heart J. 16: 219, 1938.
23. Med. Bull. Vet. Admin. 14: 207, 1938.
24. Am. Heart J. 15: 317, 1938.
25. Quart. J. Med. 7: 85, 1938.
26. Am. Heart J. 15: 515, 1938.
27. Prensa Med. Argentina, 25: 1445, 1938.
28. Lancet, 2: 717, 1938.
29. Am. Heart J. 16: 29, 1938.
30. Cuore e Circolazione, 22: 44, 1938.
31. Ann. Int. Med. 12: 236, 1938.
32. Internat. Clin. 1: 44, 1938.
33. Arch. Int. Med. 62: 151, 1938.
34. Cuore e Circolazione, 22: 304, 1938.
35. J. A. M. A. 110: 1, 1938.
36. Texas State J. M. 34: 335, 1938.
37. Am. J. Dis. Child. 55: 761, 1938.
38. Irish J. M. Sc. 2: 597, 1938.
39. J. Pediatrics, 13: 303, 1938.
40. Am. Heart J. 15: 739, 1938.
41. British M. J. 1: 564, 1938.
42. Bull. Johns Hop. Hosp. 62: 475, 1938.
43. Arch. Path. 26: 102, 1938.
44. J. Clin. Investigation, 17: 391, 1938.
45. Am. Heart J. 15: 240, 1938.
46. Am. J. Roentgen. and Rad. Therapy, 39: 713, 1938.
47. Am. Heart J. 15: 493, 1938.
48. Edinburgh M. J. 45: 620, 1938.
49. Am. Heart J. 15: 482, 1938.
50. Ann. Int. Med. 11: 2273, 1938.
51. J. A. M. A. 111: 917, 1938.
52. Am. J. M. Sc. 196, 201, 1938.
53. Bull. Johns Hop. Hosp. 63: 61, 1938.
54. Lancet, 1: 1931, 1938.
55. J. A. M. A. 111: 2000, 1938.
56. Am. Heart J. 15: 1, 1938.
57. Lancet, 1: 593 and 649, 1938.
58. Am. Heart J. 16: 88, 1938.
59. Arch. Int. Med. 61: 161, 1938.
60. Am. J. M. Sc. 196: 11, 1938.
61. J. Lab. and Clin. Med. 23: 1052, 1938.
62. Am. J. M. Sc. 195, 764, 1938.
63. Bull. Johns Hop. Hosp. 63: 111, 1938.
64. J. Lab. and Clin. Med. 24: 53, 1938.
65. Canad. M. Assoc. J. 39: 565, 1938.
66. Ann. Int. Med. 11: 2124, 1938.
67. Arch. Int. Med. 61: 26, 1938.
68. Ann. Int. Med. 11: 1464, 1938.
69. J. A. M. A. 110: 549, 1938.
70. J. de Med. de Lyon, 19: 191, 1938.
71. New England J. M. 218: 563, 1938.
72. J. Pharm. and Exp. Therap. 63: 173, 1938.
73. Arch. Path. 26: 368, 1938.
74. Am. Heart J. 15: 109, 1938.
75. Arch. Int. Med. 62: 388, 1938.
76. Am. Heart J. 16: 367, 1938.
77. J. Path. and Bacter. 47: 257, 1938.
78. Ann. Int. Med. 12: 675, 1938.
79. Am. J. M. Sc. 195: 240, 1938.
80. Arch. Path. 26: 525, 1938.
81. Am. J. Syph., Gon. and Ven. Dis. 22: 146, 1938.
82. Am. J. M. Sc. 195: 248, 1938.
83. Arch. Int. Med. 61: 860, 1938.
84. Surg., Gynec. and Obst. 67: 632, 1938.
85. J. Clin. Investigation, 17: 237, 1938.
86. Am. Heart J. 15: 652, 1938.
87. Am. J. M. Sc. 195: 510, 1938.
88. Bull. N. Y. Acad. Med. 14: 349, 1938.
89. Am. J. M. Sc. 195: 638, 1938.
90. Internat. Clin. 1: 175, 1938.
91. Bull. N. Y. Acad. Med. 14: 198, 1938.
92. Internat. Clin. 2: 1, 1938.
93. Arch. Int. Med. 61: 1, 1938.
94. Ann. Int. Med. 11: 2109, 1938.
95. J. A. M. A. 110: 792, 1938.
96. Arch. Int. Med. 61: 600, 1938.
97. Am. Heart J. 16: 240, 1938.
98. Internat. Clin. 3: 195, 1938.
99. Am. Heart J. 16: 411, 1938.
100. Lancet, 2: 942, 1938.
101. Ann. Int. Med. 11: 2079, 1938.
102. M. J. Australia, 1: 298, 1938.
103. Am. J. M. Sc. 195, 104, 1938.
104. Ann. Int. Med. 11: 2086, 1938.
105. New Orleans M. and S. J. 90: 528, 1938.
106. Ann. Int. Med. 12: 71, 1938.
107. Arch. Path. 26: 410, 1938.
108. Am. Heart J. 15: 459, 1938.
109. Arch. Path. 25: 474, 1938.
110. Am. Heart J. 15: 721, 1938.
111. New England J. M. 218: 175, 1938.
112. J. Lab. and Clin. Med. 23: 354, 1938.
113. Lancet, 1: 259, 1938.
114. J. A. M. A. 110: 1415, 1938.
115. Am. Heart J. 15: 222, 1938.
116. Ann. Int. Med. 11: 1900, 1938.
117. J. A. M. A. 110: 1724, 1938.
118. Am. Heart J. 15: 528, 1938.
119. J. Clin. Investigation, 17: 147, 1938.
120. Ann. Int. Med. 62: 821, 1938.
121. Am. Heart J. 16: 387, 1938.
122. Am. J. M. Sc. 196: 815, 1938.
123. Internat. Clin. 1: 63, 1938.
124. British M. J. 1: 434, 1938.
125. Arch. Path. 25: 445, 1938.
126. Ann. Surg. 107: 311, 1938.
127. New England J. M. 219: 257, 1938.
128. Ann. Surg. 107: 1029, 1938.

129. J. A. M. A. 111: 1750, 1938.
130. Am. J. Surg. 42: 401, 1938.
131. Illinois M. J. 74: 88, 1938.
132. Am. J. Surg. 41: 453, 1938.
133. Southern M. J. 31: 265, 1938.
134. Gyne. and Obst. 37: 453, 1938.
135. Am. J. Obst. and Gyne. 36: 413, 1938.
136. Am. J. M. Sc. 196: 819, 1938.
137. Am. J. Dis. Child. 55: 244, 1938.
138. Arch. d mal. du Coeur, 31: 217, 1938.
139. Am. Heart J. 16: 568, 1938.
140. Am. J. Dis. Child. 55: 750, 1938.
141. Am. Heart J. 15: 596, 1938.
142. Lancet, 1: 136, 1938.
143. Am. J. M. Sc. 195: 301, 1938.
144. Am. Heart J. 15: 434, 1938.
145. J. A. M. A. 110: 1982, 1938.
146. Am. J. M. Sc. 195: 522, 1938.
147. M. Clin. N. Am. 22: 111, 1938.
148. British M. J. 1: 884, 1938.
149. Arch. Int. Med. 61: 704, 1938.
150. J. A. M. A. 110: 1098, 1938.
151. New England J. M. 218: 295, 1938.
152. Am. J. M. Sc. 196: 851, 1938.
153. Quart. J. Med. 7: 455, 1938.
154. Am. Heart J. 16: 203, 1938.
155. Arch. Path. 26: 422, 1938.
156. Am. Heart J. 16: 117, 1938.
157. Arch. Path. 26: 717, 1938.
158. Am. Heart J. 15: 582, 1938.
159. Arch. Int. Med. 62: 401, 1938.
160. Internat. Clin. 3: 38, 1938.
161. Am. Heart J. 15: 58, 1938.
162. Arch. Int. Med. 61: 781, 1938.
163. Am. Heart J. 16: 43, 1938.
164. Am. J. M. Sc. 196: 400, 1938.
165. Am. Heart J. 15: 243, 1938.
166. Bull. Johns Hop. Hosp. 63: 187, 1938.
167. Am. Heart J. 16: 189, 1938.
168. J. A. M. A. 110: 265, 1938.
169. J. Clin. Investigation, 17: 581, 1938.
170. Internat. Clin. 3: 46, 1938.
171. Am. Heart J. 16: 198, 1938.
172. Arch. Int. Med. 61: 223, 1938.
173. J. Path. and Bact. 47: 43, 1938.
174. Ann. Int. Med. 12: 258, 1938.
175. Southern M. J. 31: 215, 1938.
176. Ann. Int. Med. 12: 407, 1938.
177. New England J. M. 218: 512, 1938.
178. Am. Heart J. 16: 1, 1938.
179. New England J. M. 219: 229, 1938.
180. Am. Heart J. 15: 358, 1938.
181. J. A. M. A. 110: 1647, 1938.
182. Am. Heart J. 15: 365, 1938.
183. Am. J. Roentgen. and Rad. Therapy, 39: 720, 1938.
184. Arch. Int. Med. 61: 898, 1938.
185. J. A. M. A. 111: 1821, 1938.
186. Ann. Int. Med. 12: 624, 1938.
187. Am. Heart J. 15: 22, 1938.
188. Quart. J. Med. 7: 331, 1938.
189. Medicine, 17: 76, 1938.
190. Am. Heart J. 15: 385, 1938.
191. New England J. M. 219: 412, 1938.
192. Arch. Int. Med. 62: 547, 1938.
193. J. Lab. and Clin. Med. 23: 999, 1938.
194. Arch. Int. Med. 62: 569, 1938.
195. British M. J. 1: 896, 1938.
196. Ann. Int. Med. 11: 2043, 1938.
197. Klin. Wochen. 17: 75, 1938.
198. Arch. Int. Med. 61: 184, 1938.
199. J. A. M. A. 110: 859, 1938.
200. Arch. Int. Med. 61: 83, 1938.
201. J. Lab. and Clin. Med. 23: 472, 1938.
202. Am. Heart J. 16: 561, 1938.
203. Ann. Int. Med. 11: 1084, 1938.
204. J. Lab. and Clin. Med. 23: 839, 1938.
205. Ann. Int. Med. 11: 1962, 1938.
206. J. A. M. A. 110: 1745, 1938.
207. Am. Heart J. 15: 201, 1938.
208. J. Pharm. and Exp. Therap. 62: 26, 1938.
209. J. A. M. A. 110: 202, 1938.
210. Illinois M. J. 74: 355, 1938.
211. Lancet, 1: 308, 1938.
212. Canad. M. Assoc. J. 39: 517, 1938.
213. New England J. M. 219: 743, 1938.
214. British M. J. 1: 55, 1938.
215. Am. Heart J. 15: 89, 1938.
216. Am. J. M. Sc. 196: 199, 1938.
217. J. Lab. and Clin. Med. 23: 819, 1938.
218. J. Clin. Investigation, 17: 287, 1938.
219. Ann. Int. Med. 11: 2018, 1938.
220. Am. J. M. Sc. 196: 395, 1938.
221. J. de Med. de Lyon, 19: 527, 1938.
222. Am. J. Roentgen. and Rad. Therapy, 39: 585, 1938.
223. Am. J. M. Sc. 195: 771, 1938.
224. J. Clin. Investigation, 17: 449, 1938.
225. Surg., Gynec. and Obst. 67: 349, 1938.
226. Am. Heart J. 16: 109, 1938.
227. Lancet, 1: 26, 1938.
228. Am. Heart J. 16: 582, 1938.
229. Am. J. Roentgen. and Rad. Therapy, 40: 184, 1938.
230. Am. Heart J. 15: 643, 1938.
231. M. J. Australia, 1: 813, 1938.
232. Am. Heart J. 15: 114, 1938.
233. Ibid, 16: 354, 1938.
234. Ibid, 16: 283, 1938.
235. Ann. Int. Med. 11: 1607, 1938.
236. Am. Heart J. 15: 276, 1938.
237. M. Ann. Dist. Columbia, 7: 10 and 54, 1938.
238. Am. Heart J. 16: 225, 1938.
239. Arch. Int. Med. 62: 1, 1938.
240. Am. Heart J. 15: 501, 1938.
241. Am. J. M. Sc. 196: 513, 1938.
242. Am. Heart J. 15: 354, 1938.
243. Ugeskrift f. Laeger, 100: 250, 1938.
244. Am. Heart J. 15: 116, 1938.
245. Ibid, 16: 235, 1938.
246. Ibid, 16: 555, 1938.

Marriages

TIBOR CZEISLER, Freeport, Ill., to Miss Wanda Muzyn at East Chicago, Ind., in June.

PAUL JOSEPH KAMINSKI, Chicago, to Miss Dorothy Irene Marlatt of Danville, Ill., in June.

SIMON J. MAYDET, Chicago, to Miss Anne Koopersmith of Mendota, Ill., June 18.

ROWLAND H. MUSICK, Mendota, Ill., to Miss Virginia Quinn of Shirley, June 10.

EDWARD YOUNG ROSS, Chicago, to Miss Mollie Mildred Luper of Columbus, May 7.

CHARLES H. STUBENRAUCH, Jr., Havana, Ill., to Miss Louise Stiegemeier of Champaign at Tuscola, June 26.

JOSEPH EDWARD SEXTON to Miss Loretta Sturdyvin, both of Champaign, Ill., April 19.

EMILY A. SVOBODA to Mr. Thomas A. Roscoe, both of Chicago, July 8.

Personals

Dr. Harrison C. Blankmeyer has been appointed superintendent of Health of Springfield.

William H. G. Logan, D.D.S., M.D., has sailed for Europe to attend the meeting of the International Dental Federation, of which he is president. The meeting will be in Zurich, Switzerland, July 23-27.

Dr. Wm. F. Schaare was appointed Department Surgeon of the United Spanish War Veterans at the Department Encampment of the U. S. W. V. held at Quincy.

Dr. John P. Roark, Bushnell, was honored at a combined meeting of the Fulton and McDonough county medical societies recently. Dr. Harold M. Camp, Monmouth, secretary, Illinois State Medical Society, presented Dr. Roark with a medal and a certificate of membership in the fifty year club of the state society.

At a meeting of the Madison County Medical Society in Madison June 2 the speakers were Drs. James E. Graham, Springfield, "Backache"; Walter R. Fischer, Chicago, "Common Disorders of the Foot," and Emil D. W. Hauser, Chicago, "Derangements of the Knee Joints."

Dr. Robert S. Berghoff was invited to conduct a heart clinic for the Macoupin County Medical Society at Carlinville on July 25. The clinic was followed by a formal scientific meeting and discussion of the cases.

Dr. Austin A. Hayden was elected to the Presidency of the American Society for the Hard of Hearing at their meeting in New York on June 11, 1939. He was also re-elected Chairman of the Board of Managers of the Chicago League for the Hard of Hearing on June 21, 1939.

A symposium on "Neuromuscular Tension" was held at the meeting of the American Association for the Advancement of Science in Milwaukee, on June 21, Edmund Jacobson acted as Chairman. Among the speakers were Earle B. Fowler, Maurice H. Krout, and Professor Walter E. Cannon (Harvard), who spoke extemporaneously.

Dr. Paul H. Harmon, Chicago, Dr. Francis Phillips, Chicago, and Dr. Thomas D. Masters, Springfield, addressed the Medical Syndicate in Tampico, Tamps, Mexico, in a series of lectures extending from June 15 to 19, inclusive.

These lectures respectively covered the field of orthopedic surgery, chest surgery and metabolic disease. The Medical Syndicate of this city and all other cities of Mexico cordially invite other medical men on a like mission.

News Notes

—The first endowed fellowship in pediatrics at the University of Chicago has been established by a gift of \$25,000 from the Benjamin J. Rosenthal Charities. The endowment will provide an annual fellowship of about \$1,000, it is reported.

—The cardiovascular department of Michael Reese Hospital will conduct a full time course in electrocardiography, August 21-September 2, under the direction of Dr. Louis N. Katz, director of cardiovascular research. Reservations may be made on receipt of \$10, which will be applied on the tuition. Additional information may be obtained from the hospital, Twenty-Ninth Street and Ellis Avenue.

—Members of the Department of Medicine are interested in the study of Essential Thrombocytopenic Purpura. Patients with this disease will be accepted in the Research and Educational Hospitals without charge providing they are referred by their physician. Letters should be addressed to the Head of the Department of Medicine.

—Dr. Normand L. Hoerr, assistant professor of anatomy, department of medicine, University of Chicago, has been appointed Henry Wilson Payne professor of anatomy and head of the department at Western Reserve University School of Medicine, Cleveland. He will succeed the late Dr. Thomas Wingate Todd. Dr. Hoerr graduated at the University of Chicago in 1931. He has been a member of the department of anatomy since 1926 and assistant professor since 1933.

—The Educational Committee has arranged an exhibit on Infant Welfare for the Marshall Field & Co. window given to the Chicago Medical Society for health education purposes. The win-

dow contains an incubator built by the NYA at Harrisburg.

—About one out of every 100 school teachers in down-state Illinois is believed to have active tuberculosis, the state department of health announced after studying the results of an examination of 2,818 persons at three state normal schools. A tuberculin skin test, followed by x-ray pictures of all positive reactors, was employed in the examination. The study disclosed twenty-six cases of active pulmonary tuberculosis, giving a rate of about 9 per thousand among the groups examined.

—The Chicago Medical Society will hold its annual golf tournament at Olympia Fields Country Club August 2. The many prizes include the Chicago Medical Society Championship Trophy for the lowest gross score; the VanDer-slice Trophy, to be awarded to the officer or councilor with the lowest gross score; the Sisson Trophy to be awarded to and to become the permanent possession of the doctor, whether member or officer, with the lowest net score, and the Hospital Championship Trophy, to be awarded to the hospital with the winning hospital foursome. This last prize is being awarded this year for the first time.

—Dr. Clarence O. Sappington, Chicago, received the first W. S. Knudsen Award for the most outstanding contribution to industrial medicine during 1938-1939. The award was made on the basis of his book "Medicolegal Phases of Occupational Diseases." Mr. W. S. Knudsen, president of the General Motors Corporation, made the presentation at the annual meeting of the American Association of Industrial Physicians and Surgeons in Cleveland June 7. Dr. Sappington graduated at Stanford University School of Medicine, San Francisco, in 1918. He has had extensive industrial affiliations, serving, among other things, as assistant surgeon, U. S. Public Health Service; medical director, western division, Montgomery Ward & Company, and director of the division of industrial health, National Safety Council, Chicago. Since 1932 he has been a consultant in industrial hygiene, industrial medicine and occupational diseases. He is said to be the first American to receive the degree of doctor of public health in the field of industrial hygiene, conferred by Harvard University in 1924.

—Dr. Raymond B. Allen, dean of Wayne University College of Medicine, Detroit, has been

appointed executive dean of the Chicago colleges of the University of Illinois, effective September 1. This position has been created to coordinate the educational and research activities of the university's medical, dental and pharmacy units. The three colleges in Chicago will continue as separate entities, however. In the new executive position Dr. Allen will be a direct representative of the university, however. In the new executive position whose office is on the main campus at Urbana. Dr. Allen graduated at the University of Minnesota Medical School, Minneapolis, in 1928. He served as teaching fellow in anatomy at his alma mater from 1924 to 1927 and assistant surgeon at the Northwest Clinic at Minot, N. D., from 1928 to 1930. He was associate dean in charge of graduate study at Columbia University College of Physicians and Surgeons, New York, from 1934 to 1936, when he was appointed dean of Wayne University College of Medicine.

—Dr. Percival Bailey, professor of surgery and neurology, Department of Medicine, Division of Biological Sciences, University of Chicago, has been appointed professor of neurology and neurologic surgery at the University of Illinois College of Medicine. Dr. Hans Brunner, formerly chief of the ear, nose and throat department at the Policlinic of Vienna, has been appointed assistant professor of otolaryngology on a half time basis. Both appointments are effective September 1. These newly created positions are a part of the medical school's expanded program in neuro-psychiatry under the direction of Dr. Eric Oldberg, now under way with the construction of a neuro-psychiatric institute on the grounds of the Research and Educational Hospital. Dr. Bailey graduated at Northwestern University Medical School in 1918. He has been professor at the University of Chicago since 1933. Dr. Brunner graduated at the University of Vienna in 1919, later serving on the staffs of the University Clinic of Surgery, Vienna, and the Policlinic of Vienna. During the year 1938-1939 he has been an intern in the Research and Educational Hospital.

Deaths

BRANSFORD LOUIS ADELSBERGER, Peoria, Ill.; Washington University School of Medicine, St. Louis, 1920; a Fellow A. M. A.; member of the American Urological Association; on the staff of the Methodist Hospital; aged 44; died, May 9, in a hospital at Pekin of a cerebral hemorrhage.

NORTON GEORGE BECKER, Kankakee, Ill.; Northwestern University Medical School, Chicago, 1935; member of the Illinois State Medical Society; on the staff of the Kankakee State Hospital; aged 32; died, May 5, in Chicago, of subacute and endocarditis following a streptococcal infection of the throat.

EDWARD B. BEESON, Chicago; Hahnemann Medical College and Hospital, Chicago, 1870; aged 91; died, April 11, in the Albert Merritt Billings Hospital of adenoma of the prostate with obstruction.

WILLIAM ANDREW CARTER, Trenton, Ill.; Cincinnati College of Medicine and Surgery, 1892; a Fellow A. M. A.; aged 72; died, April 30, of pneumonia and heart disease.

FRAZIER N. CLOYD, Danville, Ill.; University of Louisville (Ky.) Medical Department, 1893; a Fellow A. M. A.; on the staffs of the Lakeview and St. Elizabeth's hospitals; aged 70; died, April 18, of acute nephritis, hemolytic streptococcus sore throat and acute otitis media.

ROBERT CALVIN COOK, Springfield, Ill.; University of Louisville (Ky.) Medical Department, 1909; member of the Illinois State Medical Society; pediatrician of the division of child hygiene and public health nursing, department of public health; aged 57; died, April 13, of coronary occlusion.

CHARLES ADDISON ELLIOTT, Chicago; Northwestern University Medical School, Chicago, 1898; a Fellow A. M. A.; professor of medicine at his alma mater; vice president of the American Medical Association, 1927-1928; member of the National Board of Medical Examiners; member of the Association of American Physicians; fellow of the American College of Physicians; formerly a member of the medical council of the U. S. Veterans' Bureau; on the staff of the Passavant Hospital; aged 66; died, June 26, of cardiovascular disease.

WILMER PHELPS FRAZIER, Carthage, Ill.; Rush Medical College, Chicago, 1897; a Fellow A. M. A.; secretary of the Hancock County Medical Society; served during the World War; aged 74; died, April 26, of pneumonia.

HARRY JOSEPH FREIN, Belleville, Ill.; St. Louis University School of Medicine, '908; a Fellow A. M. A.; on the staff of St. Elizabeth's Hospital; aged 55; died, April 16, of biliary cirrhosis of the liver.

HARRY KOTLER, Chicago; University of Illinois College of Medicine, Chicago, 1933; aged 29; died, March 31, of military tuberculosis.

ROSALIE M. LADOVA, Chicago; Northwestern University Woman's Medical School, Chicago, 1898; member of the Illinois State Medical Society; aged 65; died, April 5, of arteriosclerosis and diabetes mellitus.

JAMES M. McMANUS, Menard, Ill.; St. Louis College of Physicians and Surgeons, 1899; managing officer of the Illinois Security Hospital; aged 62; died, April 11, of diabetes mellitus.

WILLIAM JOHN MEYER, Springfield, Ill.; National Medical University, Chicago, 1907; aged 65; died, April 29, in St. John's Hospital of carcinoma of the intestine.

ADOLPH G. MIZELL, Shelbyville, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; member of the Illinois State Medical Society; aged 67; died, April 23.

JOHN W. NICOLAY, Grayville, Ill.; American Medical College, St. Louis, 1899; aged 64; died, April 18, of heart disease.

CHARLES L. O'BRIEN, Chicago; Rush Medical College, Chicago, 1903; a Fellow A. M. A.; on the staff of St. Francis Hospital, Evanston, Ill.; aged 59; died, April 29, of erysipelas and pernicious anemia.

FRANKLIN BENJAMIN PEARCE, Eldorado, Ill.; Bennett College of Electric Medicine and Surgery, Chicago 1915; health officer; aged 64; died April 26 of Addison's disease.

BUENAVENTURA H. PORTUONDO, Belleville, Ill.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1889; a Fellow A. M. A.; past president and secretary of St. Clair County Medical Society; formerly chairman of the board of health of Belleville; on the staff of St. Elizabeth's Hospital; aged 73; died, March 9, in St. Anthony's Hospital, St. Louis, of pneumonia.

DORAN THERMAN RUE, Mattoon, Ill.; University of Illinois College of Medicine, Chicago, 1932; aged 32; was found dead, March 31, of an overdose of a drug, self administered.

SAMUEL RUSSELL, Macomb, Ill.; Rush Medical College, Chicago, 1881; formerly mayor of Macomb; aged 80; died, March 26, of cerebral hemorrhage.

JAMES McDONALD SCOTT, Chicago; Rush Medical College, Chicago, 1896; on the staffs of the Mother Cabrini Memorial Hospital and the Frances Willard Hospital, now known as the Loretto Hospital; aged 73; was shot and killed, April 24, by an unknown assailant.

JEROME THOMPSON, Morrisonville, Ill.; Missouri Medical College, St. Louis, 1878; aged 83; died, March 7, of chronic nephritis.

EVERETT R. ULRICH, Marine, Ill.; Jenner Medical College, Chicago, 1901; member of the Illinois State Medical Society; aged 60, died, April 11, of acute nephritis following influenza.

LESLEY EDWIN WALLACE, Thebes, Ill.; University of Louisville (Ky.) School of Medicine, 1922; aged 42; died, March 20, of an overdose of a hypnotic, self administered.

WACLAW J. WAWRZYNSKI, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1915; a Fellow A. M. A.; on the staff of the Norwegian American Hospital; aged 56; died, March 9, of ruptured gallbladder.

EDWIN CUTLER WILLIAMS, Chicago; Chicago Homeopathic Medical College, 1886; a Fellow A. M. A.; aged 74; died, March 9, of carcinoma of the bladder.

WILLIAM WILLIAMS, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; a Fellow A. M. A.; served during the World War; aged 56; died, April 5, of a self-inflicted bullet wound.

MEAD'S BREWERS YEAST

Again Improved!

AT NO INCREASED COST TO THE PATIENT

- MEAD'S BREWERS YEAST TABLETS

Vitamin B₁ potency increased from 25 to 50 International units per gram. Vitamin G (riboflavin) potency increased from 42 to 50 Sherman units per gram. Each tablet now supplies approximately 20 units each of these vitamins, so that dosage may be calculated readily in round numbers by the physician. Supplied in bottles containing 250 and 1,000 6-grain tablets.

- MEAD'S BREWERS YEAST POWDER

is also thus increased in potency per gram. In addition, it is now improved in texture so that it mixes more readily with various vehicles the physician may specify in infant feeding. Supplied in bottles containing 6 ozs.

MEAD JOHNSON & COMPANY, Evansville, Indiana, U.S.A.

*Ethically Marketed
without dosage directions
to the public*

RESEARCH, CONSTANT RESEARCH

Vitamin



1

Failing appetite with its consequent train of symptoms leading down to, actual malnutrition may have higher incidence in Spring and Summer months. This may be due to a seasonal lag in B₁ storage. Regardless of the season, however, if the underlying condition is B₁ insufficiency, it can be corrected rationally and effectively by Elixir BeroCCA (Elixir Vitamin B₁). Elixir BeroCCA contains pure crystalline synthetic thiamin chloride (vitamin B₁) manufactured according to the Roche process. The vehicle is one of the most delicious that has ever been prepared: it has a refreshing sherry-wine base to which has been added the delightful tang of orange peel.

Dose is one teaspoonful t.i.d., a.c. Each teaspoonful contains 0.625 mg. BeroCCA (thiamin chloride, 'Roche') or 208 international units. HOFFMANN-LA ROCHE, INC, NUTLEY, NEW JERSEY

**ELIXIR BEROCCA IS AN INCOMPARABLY EFFECTIVE
APPETITE TONIC IN CASES OF VITAMIN B₁ DEFICIENCY**

Cut Out This Page and Post Conspicuously

BUYERS INDEX

ABDOMINAL SUPPORTERS

S. H. Camp & Co., Jackson, Mich..... 11

FOODS

Borden Company, 350 Madison Ave., New York..... 12
Coca-Cola Co., Atlanta, Ga..... 25
Corn Products Refining Co., New York City..... 13
R. B. Davis Co., Hoboken, N. J..... ..
Knox Gelatine Laboratories, Johnstown, N. Y..... ..
Mead, Johnson & Co., Evansville, Ind..... 15
S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Medical Protective Co., Fort Wayne, Ind..... 22
Physicians Casualty Co., Omaha, Neb..... 19

HOSPITALS

Stokes Hospital, Louisville, Ky..... 19
Summit Hospital, Oconomowoc, Wis..... 20

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 19

PHARMACEUTICALS

Alba Pharmaceutical Co., 80 Varick St., New York City.... ..
American Agency, French Vichy, Brooklyn, N. Y..... ..
American Can Co., 230 Park Ave., New York City..... 3
Armour & Co., Chicago..... ..
Ernst Bischoff, Ivoryton, Conn..... ..
Bovine Company, Chicago..... 26
Bristol-Myers Co., New York..... ..
Carnrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J... 20
Ciba Company, Cedar and Washington St., New York City ..
Crookes Laboratories, New York City..... ..
Denver Chemical Co..... ..
E. Fougera & Co..... ..
Gold Pharmacal Co., New York City..... 22
Harrower Laboratory 21
Hoffman-LaRoche, Inc., Nutley, N. J..... 16
Hynson, Westcott & Dunning, Charles and Chase Sts.,
Baltimore 22

Lederle Laboratories, 30 Rockefeller Plaza, New York... 27
Lilly, Eli, & Co., Indianapolis, Ind..... 14
Maggot Products Co., 222 No. Bank Drive, Chicago..... 10
Morris, Philip, & Co., 19 Fifth Ave., New York..... ..
Nutrition Research Laboratories, 332 S. Michigan Ave.,
Chicago
Parke, Davis & Co., Detroit, Mich..... 5
Petrolagar Laboratories, 8134 McCormick Blvd., Chicago... 4
Reed & Carnrick, Jersey City, N. J..... ..
Roche Organon, Inc., Nutley, N. J..... 2
Schering & Glatz, Inc., New York City..... ..
G. D. Searle & Co., 4737 Ravenswood Ave., Chicago..... ..
Sharp & Dohme, 111 N. Canal St., Chicago..... 6
E. R. Squibb & Sons, New York..... 9
Frederick Stearns & Sons, New York..... 23
Wm. R. Warner & Co., 113 W. 118th St., New York City.. 24
Winthrop Chemical Co., 170 Varick St., New York City.. 8
Zemmer Co., Pittsburgh, Pa..... 18

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville, Ill..... 21
Kenilworth Sanitarium, Kenilworth, Ill..... 18
Michell Farm Sanatorium, Peoria, Ill..... 28
Milwaukee Sanitarium, Wauwatosa, Wis.....Front Cover
Norbury Sanitarium, Jacksonville, Ill..... 18
North Shore Health Resort, Winnetka..... 21
Rogers Memorial Sanitarium, Oconomowoc, Wis..... 28
Waukesha Springs Sanitarium, Waukesha, Wis..... 18
Weirick's Sanitarium, Elgin, Ill..... 19

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago.. 9

SURGICAL SUPPLIES

Baum Co., New York..... ..
General Electric X-Ray Corp., 2012 W. Jackson Blvd.,
Chicago

The NORBURY SANATORIUM

JACKSONVILLE, ILLINOIS

INCORPORATED and LICENSED

For the Treatment of Nervous and Mental Disorders

DR. ALBERT H. DOLLEA, Superintendent

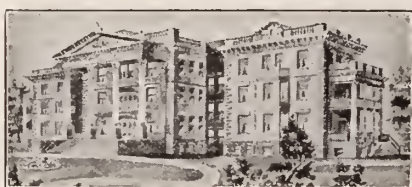
DR. FRANK GAPM NORBURY

DR. SAMUEL N. CLARK

Associate Physicians

Address
Communications

THE NORBURY SANATORIUM, Jacksonville, Illinois



BUILDING ABSOLUTELY FIRE-PROOF

Waukesha Springs Sanitarium

FOR THE CARE AND TREATMENT OF
NERVOUS DISEASES

BYRON M. CAPLES, M. D., Medical Director

FLOYD W. APLIN, M. D.

Waukesha, Wisconsin

E. J. Kelleher, M. D.
Medical Director

Christy Brown
Business Manager

Kenilworth Sanitarium

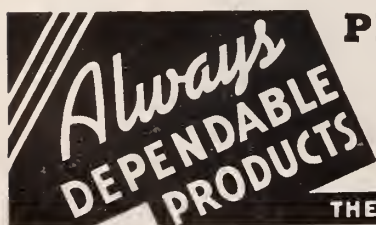
Est. in 1905 by Sanger Brown, M. D.

Built and Equipped for the Treatment of
Nervous and Mental Diseases

F. G. Shufflebarger, M. D.
Junior Physician

Write for Booklet
on
Insulin and Metrazol Therapy

Address:
Box 600
Kenilworth, Ill.



PREScribe OR DISPENSE ZEMMER

Pharmaceuticals . . . Tablets, Lozenges, Ampoules, Capsules,
Ointments, etc. Guaranteed reliable potency. Our products
are laboratory controlled. Write for catalog.

Chemists to the Medical Profession.

IL 8-39 .

THE ZEMMER COMPANY, Oakland Station, PITTSBURGH, PA.

Chicago Tumor Institute

21 WEST ELM STREET

Phone: Delaware 5600

Scientific Committee

Max Cutler, M. D., Chairman

Sir G. Lenthal Cheattle, F. R. C. S.

Henri Coutard, M. D.

Arthur H. Compton, Ph. D.

Ludvig Hektoen, M. D.

The Chicago Tumor Institute offers consultation service to physicians and radiation facilities to patients suffering from neoplastic diseases. Graduate instruction in radiotherapy is offered to qualified physicians.

The Radiation Equipment includes:

One 220 k.v. x-ray apparatus

One 400 k.v. x-ray apparatus

One 500 k.v. x-ray apparatus

One 10 gram radium bomb.

MORPHINE AND OTHER DRUG ADDICTIONS

Selected patients who wish to make good and learn how to keep well; methods easy, regular, humane
Dr. Weirick's Sanitarium, Elgin, Ill.

THE STOKES HOSPITAL

923 Cherokee Road, Louisville, Ky.

Our **ALCOHOLIC** treatment destroys the craving, restores the appetite and sleep, and rebuilds the physical and nervous condition of the patient. Liquors withdrawn gradually; no limit on the amount necessary to prevent or relieve delirium.

MENTAL patients have every comfort that their home affords.

The **DRUG** treatment is one of gradual Reduction. It relieves the constipation, restores the appetite and sleep; withdrawal pains are absent. No Hyoscine or rapid withdrawal methods used unless patient desires same.

NERVOUS patients are accepted by us for observation and diagnosis as well as treatment.

E. W. STOKES, Med. Dir.

Phones High. 2101-2102

HOOZAT?

I crept upstairs, my shoes in hand,
Just as the night took wing,
And saw my wife, four steps above,
Doing the same darned thing.

—Dirge.



SINCE 1902

Hospital
Accident
Sickness

**PHYSICIANS CASUALTY
ASSOCIATION**

**PHYSICIANS HEALTH
ASSOCIATION**



SINCE 1912

INSURANCE

FOR ETHICAL PRACTITIONERS EXCLUSIVELY
(50,000 policies in force)

LIBERAL HOSPITAL EXPENSE COVERAGE FOR
\$10.00 PER YEAR

\$5,000.00 accidental death	For
\$25.00 weekly indemnity, accident and sickness	\$33.00 per year
\$10,000.00 accidental death	For
\$50.00 weekly indemnity, accident and sickness	\$66.00 per year
\$15,000.00 accidental death	For
\$75.00 weekly indemnity, accident and sickness	\$99.00 per year

37 years under the same management
\$1,700,000. INVESTED ASSETS
\$9,000,000. PAID FOR CLAIMS
\$200,000. deposited with State of Nebraska for protection of our members.
Disability need not be incurred in line of duty—benefits from the beginning day of disability.

SEND FOR APPLICATIONS, DOCTOR, TO
400 FIRST NATIONAL BANK BLDG.
OMAHA, NEBRASKA

Radium Rental Service

By

**THE PHYSICIANS RADIUM
ASSOCIATION**

Organized for the purpose of making radium available to physicians to be used in the treatment of their patients. Radium loaned to physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

The Physicians Radium Association

Room 1307—55 East Washington St.,
Pittsfield Bldg., CHICAGO, ILL.
Telephones: Central 2268-2269
Wm. L. Brown, M.D., Director



Hospital Facilities
& Personnel for

**NERVOUS & MENTAL
DISORDERS**

G. R. LOVE, M. D.,
Physician in Charge



INCRETONE..

A DEPENDABLE TONIC

in general debility, convalescence and asthenia. These conditions are basically due to lowered energy liberation. A tonic which increases the nutritional supply from which all of the energy of the body is derived through physiological oxidations is rational therapy.

BOTTLES OF 6 OUNCES

Dose: 1 or 2 teaspoonfuls before meals.

G. W. CARNRICK CO.

20 Mt. Pleasant Avenue

Newark, New Jersey

"ISMS"

SOCIALISM: If you own two cows, you give one to your neighbor.

COMMUNISM: You give both cows to the government, and the government gives you back some of the milk.

FASCISM: You keep the cows, but give the milk to the government, who sells some of it back to you.

NEW DEALISM: You shoot one cow, milk the other, and then pour the milk down the sink.

MAYBE IT HAD DIABETES

After a hard day's trip on a coast to coast bus, during which there were numerous stops, an old lady complained to the driver. "Say, young man, seems like we stop at every other telegraph pole." - - - - -

"Well, ma'am," the driver replied, "this is a Greyhound bus."—*The Excavating Engineer.*

A beautiful girl leaving a dentist's office was quite chagrined when she suddenly remembered that the dentist forgot to look at her teeth.—*Better Enameling.*

NORTH SHORE HEALTH RESORT

Winnetka, Illinois

A general medical sanitarium equipped for treatment of

Cardiovascular, Renal, Gastro-intestinal and Pulmonary Diseases—Diabetes Mellitus and other Disorders of Metabolism—Anemias—Allergic Conditions—Arthritis—Disabilities Secondary to Old Age—Mild Nervous and Mental Disorders.

Special attention to convalescent care.

Individualized Treatment

Moderate Rates

H. E. Hickman, M. D., *Medical Director*

THE EDWARD SANATORIUM

ESTABLISHED IN 1907 BY DR. THEODORE B. SACHS

Jerome R. Head, M. D., Medical Director

Alberto L. de Guevara, M. D., Associate Medical Director

NAPERVILLE, ILLINOIS

An institution affiliated with the Chicago Tuberculosis Institute for the treatment, by modern methods, of selected cases of Pulmonary Tuberculosis.

Attractive location and surroundings.

Buildings and equipment modern and adequate for all emergencies.

Well trained staff of physicians and nurses.

Physicians are invited to visit the Sanatorium at any time. They are assured of every professional courtesy and consideration.

For detailed information, rates and rules for admission apply to—

THE CHICAGO TUBERCULOSIS INSTITUTE

Phone Central 8316

Rooms 504

360 North Michigan Ave.

Chicago

"There are three stages

in the history of every medical discovery. When it is first announced, people say that it is not true. Then a little later, when its truth has been borne on them so that it can no longer be denied, they say that it is not important. After that, if its importance becomes sufficiently obvious, they say 'anyhow, it is not new.' "

The HARROWER LABORATORY, Inc., Glendale, California

NEW YORK

CHICAGO

DALLAS

PORTLAND

The idea behind ADREMIN (formerly Adreno-Spermin) therapy in hypoadrenia has gone through all these stages. ADREMIN is available in tablets, capsules, drops, and in solution for intramuscular injection. Prescribe ADREMIN, 1 tablet q.i.d., as an endocrine tonic in asthenia and the "fatigue syndrome."

PROFESSIONAL PROTECTION

SINCE 1899
SPECIALIZED
SERVICE

A DOCTOR SAYS:

"It has been a great satisfaction to know that one is being protected by people who know what to do and what not to do."

THE

MEDICAL PROTECTIVE COMPANY

OF FORT WAYNE, INDIANA

WHEATON, ILLINOIS

CONTENTS—Continued

Diabetes and Surgery. <i>Walter W. Voigt, M. D., Chicago</i>	167
Sudden Death: Anatomic Findings. <i>B. Markowitz, M. D., Bloomington</i>	170
Colloidal Mercury Sulphide and Wassermann Fastness. <i>S. J. Zakon, M. D., and M. A. Jacobson, M. D., Chicago</i>	172
Results of Nephropexy. <i>C. F. Lewis, M. D., and Paul L. Singer, M. D., Chicago</i>	175
Anchoring the Elusive Breast Tumor. <i>Earle I. Greene, M. D., and J. Major Greene, M. D., Chicago</i>	178
Calcium Therapy Re Cardiovascular System. <i>Edward Podolsky, M. D., Brooklyn, N. Y.</i>	179
Cardiac Review of 1938. <i>Nathan Flaxman, M. D., Chicago</i>	182

EDITORIALS

Lengthy Papers Not Desirable	101
Victory for A. M. A.	101
Lay Paper Comment on A. M. A. Acquittal	106
Poliomyelitis Season Now With Us	106
Factors Causing Essential Hypertension	108
Medical Economics. <i>E. S. Hamilton, M. D.</i>	111

CORRESPONDENCE

Refresher Courses. <i>T. B. Williamson and John F. Carey</i>	112
American Board of Obstetrics and Gynecology	113
Mississippi Valley Medical Meeting	113
Educational Committee Report	114
Scientific Service Committee Report	114
Lederle's Fair Exhibit	115
American Congress of Physical Therapy	115
Report Vitamin E Can Be Produced	116
Smallpox Increasing	116
American Congress of Obstetrics	116
Marriages	197
Personals	198
News	198
Deaths	199

Behind MERCUROCHROME

(dibrom-oxymercuri-fluorescein-sodium)



is a background of

Precise manufacturing methods insuring uniformity

Controlled laboratory investigation

Chemical and biological control of each lot produced

Extensive clinical application

Thirteen years' acceptance by the Council of Pharmacy and Chemistry of the American Medical Association



A booklet summarizing the important reports on Mercurochrome and describing its various uses will be sent to physicians on request.

Hynson, Westcott & Dunning, Inc.

BALTIMORE, MARYLAND

A Unique Remedy of Unique Merit

ELIXIR BROMAURATE

Is of pre-eminent therapeutic value in

Whooping Cough

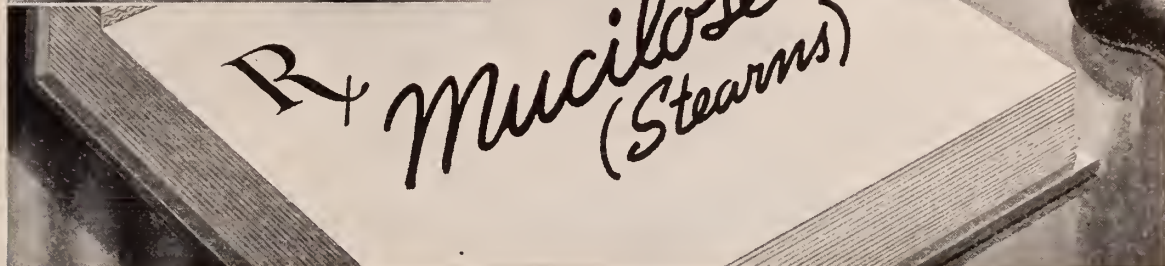
- Cuts short the duration of the illness, reduces the frequency of the attacks, relieves the distressing, painful cough and gives the child rest and sleep.
- **ELIXIR BROMAURATE** is equally valuable in other PERSISTENT COUGHS and in BRONCHITIS and BRONCHIAL ASTHMA.
- **ELIXIR BROMAURATE** is a standard, assayed and palatable gold preparation. The dosage for children is a teaspoonful every 3 to 4 hours. Adult dosage two teaspoonfuls.

In four-ounce original bottles

GOLD PHARMACAL CO., New York



For Pregnancy Constipation . . .



REGULATIVE . . . NON-IRRITATING . . . NON-HABIT-FORMING

Spastic constipation and colitis—particularly during pregnancy—contraindicate harsh, irritating roughage or violent laxation.

Mucilose unites the fecal material into a soft, mushy mass and facilitates its passage by lubricating both the intestinal tract and its content.

Mucilose is not accompanied by un-

pleasant leakage or vitamin depletion—an accusation frequently leveled at mineral oil.

Mucilose offers a hemicellulose (vegetable gum) prepared by a special process from the *Plantago loeflingii*. Available in two convenient, palatable forms—

MUCILOSE GRANULES
and **MUCILOSE FLAKES**

FREDERICK STEARNS & COMPANY DETROIT, MICHIGAN

NEW YORK

KANSAS CITY

SAN FRANCISCO

WINDSOR, ONTARIO

SYDNEY, AUSTRALIA

Frederick Stearns & Company, Dept. IM-8, Detroit, Michigan

Please send me a supply of Mucilose for clinical trial.

Name M. D.

Address

City State





Dear Doctor

You will appreciate that in presenting Alka-Zane we confess to believing that you are better able to prescribe for the treatment of acidosis than is the fruit peddler.

You prescribe Alka-Zane for the practical reason that, when food is not enough, this palatable effervescent salt supplies the necessary sodium, potassium, calcium and magnesium for the replenishment and maintenance of the alkali reserve. These salts are present in Alka-Zane in their readily assimilable forms; as citrates, carbonates and phosphates. There are no lactates, tartrates or sulphates, and no sodium chloride.

If you would like us to send you a professional trial supply of Alka-Zane, please ask for it on your letterhead. We shall be glad to send it. Alka-Zane is supplied in bottles of 1½, 4 and 8 ounces.

ALKA-ZANE

A William R. Warner Product for ACIDOSIS



**PAUSE...AT THE
FAMILIAR
RED
COOLER**

Drink
Coca-Cola
Delicious and
Refreshing

COPYRIGHT 1939, THE COCA-COLA COMPANY

Book Reviews

MEDICAL STATE BOARD EXAMINATIONS. By Harold Rypins, M. D. Fourth edition, revised. Philadelphia-Montreal-London. J. B. Lippincott Company. 1939. Price, \$4.50.

This is a work of topical summaries and answers, an organized review of actual questions given in medical licensing examinations throughout the United States.

As Secretary of the New York State Board of Medical Examiners and a member of the National Board of Medical Examiners, Dr. Rypins has had a broad and unique experience with candidates for admission to the practice of medicine.

Out of that background of experience has come a volume which—far more than any other—gives the medical student a sense of direction as to the points and subjects on which his attention should be concentrated in order to insure success with his examinations.

AN INTRODUCTION TO SOCIOLOGY AND SOCIAL PROBLEMS. By Deborah MacLurg Jensen, R. N. St. Louis. The C. V. Mosby Company. 1939. Price, \$2.75.

This is a text book for nurses. From beginning to end the material is well selected and well organized for the classroom.

PRACTICE OF ALLERGY. By Warren T. Vaughan, M. D. Richmond, Virginia. Three hundred thirty-eight illustrations. St. Louis. The C. V. Mosby Company. 1939. Price, \$11.50.

This volume is intended for the physicians and other serious students of the subject of allergy, except for a few otherwise credited all photographs are the author's own made with Leica Camera and its attachment for precision work. The work should be in the library in every up-to-date physician and surgeon.

ENDOCRINOLOGY IN MODERN PRACTICE. By William Wolf, M. D., M. S., Ph. D., Endocrinologist to the French Hospital, Attending Endocrinologist, Misericordia Hospital, New York City; Consulting Endocrinologist, New York University Dental School. Second Edition, Completely Revised. 1077 pages with 176 illustrations. Philadelphia and London. W. B. Saunders Company, 1939. Cloth, \$10.00 net.

Since the publication of the first edition, many forward steps have been taken which have carried endocrine diagnosis and therapy into more accurate and definite grounds. The advance in endocrinology necessitated the addition of new sections, to replace others, and, for purposes of easier orientation, to rearrange certain chapters. Others required extensive revision of the volume.



Ferrous Iron That Remains Ferrous — **HEMATINIC PLASTULES**

Repeated tests prove that the iron in Hematinic Plastules remains in a semi-fluid soluble ferrous state indefinitely because the capsule is hermetically sealed. This is an important advantage of Hematinic Plastules as it assures maximum absorption and assimilation of the iron medication.

The small daily dose of three Hematinic Plastules Plain is usually sufficient to prompt optimal hemoglobin rise, in cases of iron deficiency anemia.

For good results in instances of chronic blood loss, the anemias of pregnancy, or for general debility, prescribe Hematinic Plastules — modern iron therapy.

*Hematinic Plastules — Plain
Hematinic Plastules with Liver Concentrate
Bottles of 50 or 100*

THE BOVININE COMPANY
8134 McCormick Boulevard • Chicago, Illinois



VITAMIN B COMPLEX

Lederle

REGULAR SUPPLEMENTS of "Vitamin B Complex Oral *Lederle*" will compensate for:

- 1—FAULTY DIETARY HABITS—Many of our diets are made up of the foods we like, thus our appetite becomes the guide for selecting foods. On this basis many persons actually choose a poorly balanced diet.
- 2—DIETARY LIMITATIONS—due to organic diseases. Chronic disease usually decreases appetite and hence the amount and character of food ingested.
- 3—NECESSARY DIETARY RESTRICTIONS—The treatment of certain diseases (hypertension, diabetes, allergy, gastric ulcer) often limits the food intake—both as to the amounts and variety of foodstuffs.
- 4—INCREASED REFINEMENT OF FOODSTUFFS—According to recently published data the present day average American dietary contains about one-third as much Vitamin B₁ (thiamin chloride) as did the average diet of 1840. In many instances the B₁ intake does not meet even the minimum requirements.

"Vitamin B Complex Oral *Lederle*" contains all of the recognized B factors in a high concentration—potency has recently been doubled!

Each teaspoonful (4 cc.) contains:

Thiamin Chloride (B₁) 1.5 mgms.—500 International Units
 Riboflavin (B₂) .6 mgm.—240 Bourquin-Sherman Units
 Dermatitis Factor (B₆) 20 "Rat Day" Units—approximately 200 micrograms
 Filtrate Factor(s) approximately 20 Rat or Chick Growth Units
 Nicotinic Acid or derivatives from 40 grams of liver
 Ascorbic Acid (Vitamin C) 20-30 International Units

PACKAGES:

"VITAMIN B COMPLEX ORAL *Lederle*"

4 oz., 8 oz., 12 oz. bottles

"VITAMIN B COMPLEX PARENTERAL *Lederle*"

containing all of the recognized B factors, for intramuscular injection, is available for the treatment of severe vitamin deficiencies. Package: 1—10 cc. vial.

LEDERLE LABORATORIES, INC.
 30 ROCKEFELLER PLAZA
 NEW YORK, N. Y.



Rogers Memorial Sanitarium

(Formerly Oconomowoc Health
Resort)

Oconomowoc, Wisconsin

Phone 448

RESIDENT PHYSICIANS

JAMES C. HASSALL, M. D.
Medical Director

OWEN C. CLARK, M. D.
Assistant Physician



Founded in 1907 for the treatment of NERVOUS and MENTAL DISEASES

Fireproof building; accommodations modern and homelike. Fifty acres of park with beautiful views over lakes. Every essential for treatment provided, including hydro- and occupational therapy under trained personnel. Number of patients limited, assuring personal attention from the staff.

BOARD OF TRUSTEES

JAMES C. HASSALL, M. D.

T. H. SPENCE
MITCHELL MACKIE
MACKEY WELLS
Milwaukee, Wisconsin

PETER BASSOE, M. D.
Chicago, Illinois
W. S. MIDDLETON, M. D.
Madison, Wisconsin

MICHELL FARM



MICHELL FARM

Mild Nervous and Mental
Diseases

MICHELL SANITARIUM

Severe Nervous and Mental
Drug and Alcoholic Cases

Licensed by the State of Illinois

George W. Michell, M.D., Medical Director; Helen C. Coyle, M.D., Psychiatrist
Wm. H. Holmes, M.D., Chicago, Med. Con.

Selected Cases of Schizophrenia (Dementia Praecox) received for Insulin Shock Therapy

Literature on Request • 106 N. Glen Oak Ave., Peoria, Illinois

Illinois Medical Journal

ILLINOIS ACADEMY
OF MEDICINE
SEP 15 1939
LIBRARY

OWNED AND PUBLISHED BY THE MEDICAL PROFESSION OF ILLINOIS
Office of Publication 715 Lake Street, Oak Park, Illinois; Editorial and Executive Office 6221 Kenmore Ave., Chicago

Vol. 76, No. 3

SEPTEMBER, 1939

\$3.00 a Year

CONTENTS:

Editorials (For Titles See Extended Table of Contents) 201

ORIGINAL ARTICLES

Acute Appendicitis and Peritonitis. *Karl A. Meyer, M. D., Peter A. Rosi, M. D., Alfred Lueck, M. D. and Malcolm Todd, M. D., Chicago*..... 221
Tuberculous Enterocolitis. *Leo L. Hardt, M. D., Morris Weissman, M. D., Carroll E. Cook, M. D., and Clement L. Martin, M. D., Chicago*... 229
Plastic and Reconstructive Surgery. *Joseph E. Beck, M. D., Chicago*..... 237
Traumatic Psychoses. *H. H. Goldstein, M. D., Chicago* 242

Psychotic Reaction re Trauma. *D. Louis Steinberg, M. D., Elgin*..... 246
Schizophrenic-like Psychosis. *Louis B. Shapiro, M. D., Elgin*..... 250
Acute Otitis Media and Mastoiditis. *M. A. Glatt, M. D., Chicago*..... 254
Roentgenographic Aspects of Petrositis. *S. M. Morwitz, M. D., Chicago*..... 258
Public Health Program re Obstetrics and Pediatrics. *Elizabeth B. Ball, M. D., Springfield*.... 265
Pregnancy in Double Uterus. *Maurice P. Rogers, and Berget H. Blocksom, Jr., M. D., Rockford, Ill.* 270
Psychoses in Children. *Eugene I. Falstein, M. D., Chicago* 271

(Continued on page 22)

Entered as Second-class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 8, 1879. Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 8, 1917, authorized July 15, 1918.

MILWAUKEE SANITARIUM, Wauwatosa, Wis. For NERVOUS DISORDERS

(Chicago Office—1823 Marshall Field Annex
Wednesdays, 1-3 P. M.) Central 1162.

MAINTAINING the highest standards for more than a half century, the Milwaukee Sanitarium stands for all that is best in the care and treatment of nervous disorders. Photographs and particulars sent on request.

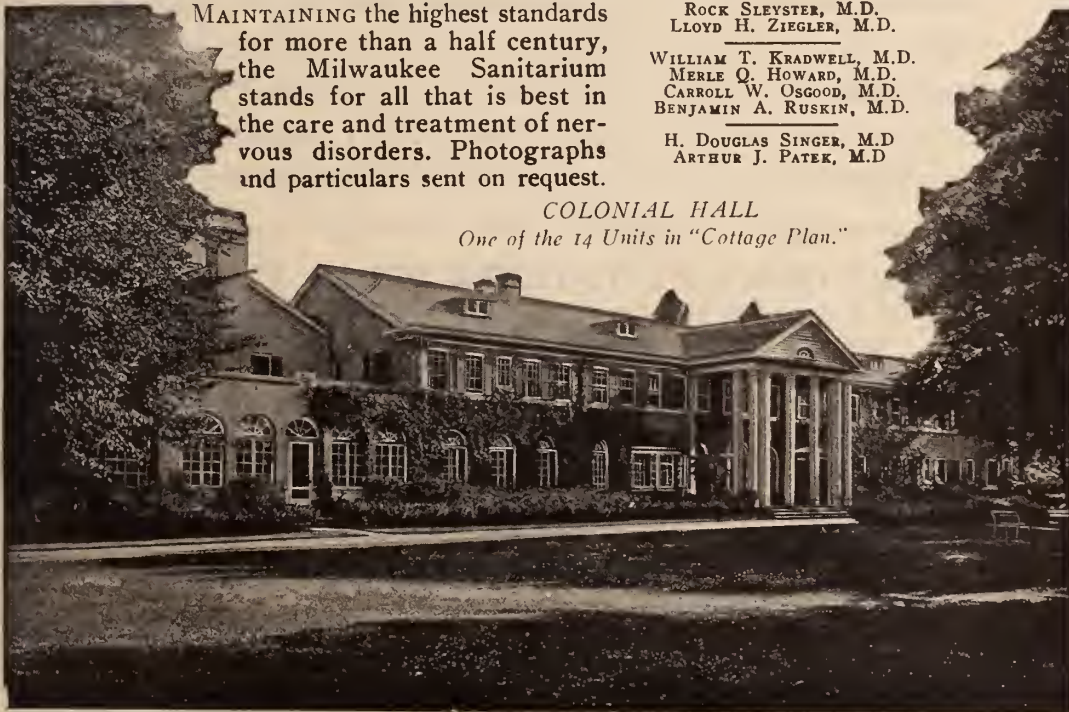
ROCK SLEYSER, M.D.
LLOYD H. ZIEGLER, M.D.

WILLIAM T. KRADWELL, M.D.
MERLE Q. HOWARD, M.D.
CARROLL W. OSGOOD, M.D.
BENJAMIN A. RUSKIN, M.D.

H. DOUGLAS SINGER, M.D.
ARTHUR J. PATEK, M.D.

COLONIAL HALL

One of the 14 Units in "Cottage Plan."



VI-PENTA DROPS

*A New Accomplishment
in Vitamin Medication*



Vi-Penta Drops is a unique preparation which solves the problem of providing adequate vitamin supplements—all 5 important vitamins—for infants and others who cannot swallow capsules. The vitamins in Vi-Penta Drops are in a highly concentrated, clear, palatable solution. **PACKAGES:** 15 cc and 60 cc, each with measuring dropper, calibrated for 5- and 10-minim doses. One 15-cc vial equals 1 package of 25 Vi-Penta Perles. One 60-cc vial equals 1 package of 100 Vi-Penta Perles.

TEN MINIMS OF VI-PENTA DROPS EQUALS ONE VI-PENTA PERLE IN VITAMIN POTENCY



Thus 10 minims of the new preparation contains:

Vitamin A, 9000 U.S.P. units
Vitamin B₁, 150 International Units (0.45 mg.) Thiamin chloride
Vitamin B₂ (G), 20 Gamma Riboflavin
Vitamin C, 500 International Units (25 mg.) Ascorbic acid
Vitamin D, 900 U.S.P. Units

HOFFMANN-LA ROCHE, INC., ROCHE PARK, NUTLEY, N. J.

CANNED FOODS AND HUMAN ENERGY REQUIREMENTS

● An adequate supply of food energy is one of a number of nutrient requirements of man. Fortunately, all nutrients—with the exception of water, minerals and accessory factors—supply chemical energy which the body can utilize to support muscular activity and life processes. Individual foods will, however, vary in the extent to which they supply food energy.

The energy requirements of man and the caloric values of foods have long been fields of active investigation. Energy requirements are measured in terms of a heat unit, the calorie. Many rescarches (1) show that human caloric requirements are variable and influenced by a number of factors.

During periods such as infancy, childhood, pregnancy and lactation, or during convalescence from wasting illness, energy-yielding nutrients are required both for support of body activity and for tissue formation. However, for the average adult, food energy intake should balance energy expenditure. For adults, variation in activity is the chief factor influencing variation in energy requirement; age, sex, size and body build being comparable. Sedentary occupations may require a food energy intake of 2500 calories per day; 5000 calories might be necessary if the individual engaged in strenuous muscular activity. Close approximations are available for the probable food energy requirements of individuals during different stages of the life cycle and engaged in various activities (1, 2).

Experiments (3) have also demonstrated that oxidation of foodstuffs in the animal body—due allowance being made for the energy contents of the end-products of oxidation—yields the same number of cal-

ories as are produced by the oxidation of similar foodstuffs in the combustion type calorimeter. Since the potential food energy of foodstuffs resides in their contents of carbohydrates, fats and proteins, the available calorific value of any food may be readily calculated (4) by using the factors 4, 9 and 4 calories per gram of these respective nutrients. Of these food components, the carbohydrates and fats are those which contribute most towards attainment of our varied, food energy requirements. Reliable tables are available (5) which list the calorific contributions of most common foods.

It has been established first, that foods—principally by virtue of their carbohydrate and fat contents—contribute energy for use by the human body; and second, that the human energy requirement is conditioned by many factors and may vary widely. An adequate supply of food energy is, of course, one of the necessary objectives of proper nutrition. However, individual attributes such as vitality, strength or endurance are influenced by—but not solely dependent on—proper nutrition, in which adequate food energy is supplied.

The food energy values of commercially canned foods are essentially those of the raw materials from which they are prepared. In some instances, the natural caloric values of the raw foods may have been enhanced by the medium in which they were packed, for example, carbohydrate-bearing syrups or sauces used in the canning procedure. Consequently, since canned foods include products of both high and low caloric intakes, such foods are valuable in formulating diets to supply any intake of food energy which might be desired.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

1. 1938. Nutrition Abstracts and Review. 7, 509.
2. 1933. U. S. Dept. Agr. Circular No. 296.
3. 1931. The Elements of the Science of Nutrition, Fourth Edition, Graham Lusk, Saunders Co., Philadelphia, pp. 61-74.
4. 1938. Chemistry of Food and Nutrition, Fifth

- Edition, Henry C. Sherman, Macmillan Co., New York, pp. 150
5. 1931. U. S. Dept. Agr. Circular No. 146.
1931. U. S. Dept. Agr. Circular No. 50.
1935. Dietetics for the Clinician, Second Edition, M. A. Bridges, Lea & Febiger, Philadelphia.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the fifty-first in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.



WHY

THE EMULSION...

Petrolagar FOR CONSTIPATION

**Does not interfere with
secretion or absorption.**

1. Petrolagar is more palatable. Easier to take by patients with aversion to plain oil—may be thinned by dilution.
2. Miscible in aqueous solutions. Mixes with gastro-intestinal contents to form a homogeneous mass.
3. Does not coat intestinal mucosa. Petrolagar is an aqueous suspension of mineral oil — oil in water emulsion.
4. No accumulation of oil in folds of mucosa.
5. Will not coat the feces with oily film.
7. Augments intestinal contents by supplying an unabsorbable fluid.
8. More even distribution and dissemination of oil with gastro-intestinal contents.
9. Assures a more normal fecal consistency.
10. Less likely to leak.
11. Provides comfortable bowel action.
12. Makes possible five types of Petrolagar to select from to meet the special needs of Bowel Management.

Petrolagar — Liquid petrolatum 65 cc. emulsified with 0.4 Gm. agar in a menstruum to make 100 cc.



Petrolagar

Petrolagar Laboratories, Inc. • 8134 McCormick Boulevard • Chicago, Illinois

One of a series of advertisements prepared and published by PARKE, DAVIS & CO. in behalf of the medical profession. This "See Your Doctor" campaign is running in the *Saturday Evening Post* and other leading magazines.



"WHAT'S COME OVER SALLY?"

LIFE IN THE McCormick household has suddenly become full of unpleasant surprises.

Sally, the merry little girl with "such a sunny disposition," is now a creature of unpredictable moods. She is given to easy tears and sudden fits of temper—quick to take offense at some chance remark. It's obvious she's not herself.

What should Sally's parents do about it? Pronounce her behavior inexcusable and devise a punishment to fit the crime? Or suffer the outbursts in silence?

No, because they are sensible people, Sally's parents will do neither of these things. They will look upon her emotional upsets chiefly as evidence

that something is *physically* wrong—that bodily readjustments are sending up danger signals that should be heeded promptly. And realizing this, they will take her to the family doctor.

There is every reason why a girl entering her teens should be given regular check ups by a physician. Important changes are taking place which frequently throw the body's delicately-adjusted glandular system out of balance.

This is often a cause of headaches, weight disturbances, and emotional outbursts. During adolescence, heart and lungs need watching. At this time, tuberculosis, anemia, and appendicitis become greater hazards.

The doctor can not only help remedy "the troubles of the teens," but if the child is brought to him early, he can often forestall them. He can correct any organic weakness.

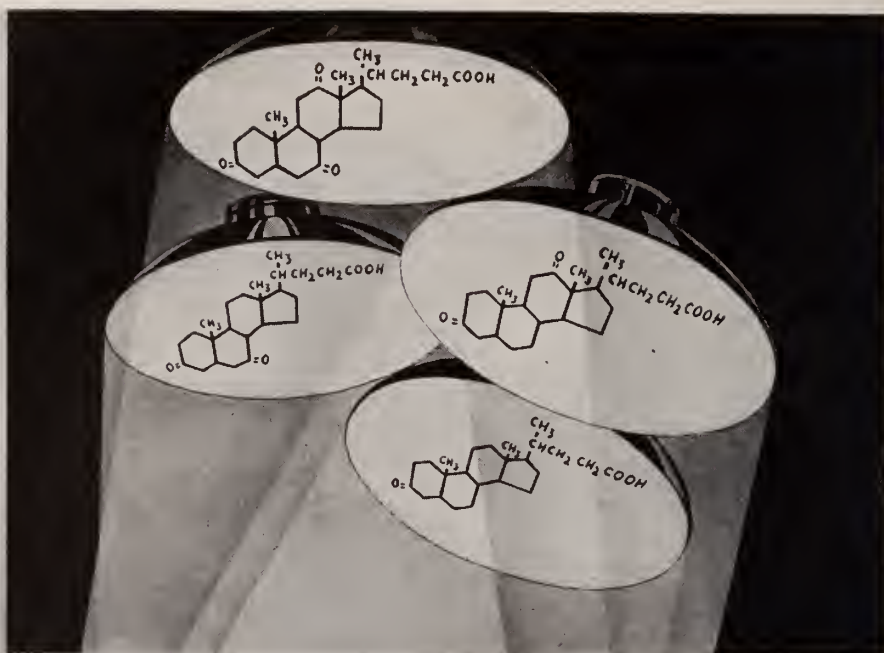
Under the physician's sympathetic direction, adolescence is usually a happier prelude to healthy, happy womanhood.

Copyright, 1939, Parke, Davis & Co.

PARKE, DAVIS & COMPANY
Detroit, Michigan

*The World's Largest Makers of
Pharmaceutical and Biological Products*

SEE YOUR DOCTOR



Light on the Gall Bladder Problem

The discovery and application of the ketocholanic acids (Ketochol) has thrown new light on the problem of gall bladder disease.

Essentially Ketochol is a choleretic agent, stimulating the hepatic cells to secrete a greatly increased quantity of aqueous bile—the increase averaging about 144%. Thus, from liver to ampulla of Vater the entire biliary tract is flushed and static congestion is relieved.

THE KETOCHOL REGIMEN

In the treatment of chronic cholecystitis, cholangitis and hepatic

dysfunction, the use of Ketochol is combined with (1) frequent feedings of a diet rich in uncooked fats to stimulate gall bladder evacuation, (2) antispasmodic therapy to relax the sphincter of Oddi and reduce irritability of the gastrointestinal tract.

KETOCHOL

is a combination of the oxidized or keto form of the bile acids (cholic, desoxycholic, chenodesoxycholic and lithocholic) normally present in human bile.

SUPPLIED IN BOTTLES OF 100 AND 500 TABLETS

G. D. Searle & Co.

Ethical Pharmaceuticals Since 1888
CHICAGO

New York

San Francisco

Kansas City





*No fuss . . . no trouble when it's S.M.A.
Aboard the Californian, S.M.A. is pre-
pared and fed the same as it is at home,
easily and quickly, without interruption
or change in baby's feeding schedule.*

THIS TRAVELING MAN EATS



S.M.A. FEEDINGS ARE THE SAME EVERYWHERE

Whether S.M.A. is prepared in New York or California, or even enroute, the feedings are always uniform—like breast milk.

In any climate, S.M.A. remains fresh and sweet, because it is nitrogen packed to prevent oxidation or change in its chemical and physical composition.

INFANTS RELISH S.M.A. — DIGEST IT EASILY — THRIVE ON IT!

S. M. A. is a food for infants — derived from tuberculin tested cows' milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride;



altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and in physical properties.

Prompt Symptomatic Relief in PEPTIC ULCER

...with **PLAIN KNOX
GELATINE (U. S. P.)**



CASE I—FEMALE, 74

Uncomplicated gastric ulcer first demonstrated by Roentgen rays in 1934. Diet and alkalis afforded little relief. Accompanied by loss of weight. Repeated X-ray studies in 1936 and 1937 showed no improvement. She was placed on a diet-gelatine regime in November, 1937. Relief immediate. Gained weight. Roentgen studies in April, 1938 showed no demonstrable ulcer.

NOTE: The gelatine used in this study was plain Knox Gelatine (U.S.P) which assays 85% protein and which should not be confused either with inferior grades of gelatine or with sugar-laden dessert powders, for these latter products will not achieve the desired effects. When you desire pure U.S.P. Gelatine, be sure to specify KNOX. Your hospital can get it on order.

CLINICAL research has recently demonstrated the effectiveness of utilizing plain Knox Gelatine (U.S.P.) in treatment of peptic ulcer. In a group of 40 patients studied, 36 (or 90%) were symptomatically improved; 28 of these (or 70%) experienced *immediate relief of all symptoms*. Other than dietary regulation which included frequent feedings of plain Knox Gelatine no medication was given except an occasional cathartic.

NO DANGER OF ALKALOSIS

This regime thus eliminates the "alkalosis hazard" attendant upon continued alkali therapy. In discussing the mode of action by which gelatine brings peptic ulcer relief, Windwer and Matzner* speak of the acid-binding properties by which proteins can neutralize acids, and they state that the frequent gelatine feedings "apparently caused more prolonged neutralization of the gastric juice."

PEPTIC ULCER FORMULA

Empty one envelope Knox Gelatine in a glass three-quarters filled with cold water or milk. Let the liquid absorb the gelatine. Then stir briskly and drink immediately before it thickens. Take hourly between feedings for seven doses a day.

*Windwer and Matzner, *Am. Jl. Dig. Dis.* 5: 743, 1939.

WRITE DEPT. 483

KNOX GELATINE LABORATORIES
JOHNSTOWN NEW YORK

Please send complete details of the Knox Gelatine peptic ulcer regime.

Name _____
Address _____
City _____ State _____





At no time during life
 . . . does the need
 for **CALCIUM** cease

CALCIUM and phosphorus are essential elements in the diet at all ages. Vitamin D is quite inseparably linked with the body's utilization of these elements and it also acts to offset the deleterious effects of a possible imbalance as a result of vagaries in the patient's choice of foods.

In cases of deficiency of these elements, and when the ingestion of sufficient calcium-rich foods (such as milk and milk products) fails to meet the bodily requirement for calcium and phosphorus, the use of Dicalcium Phosphate Compound with Viosterol Squibb will provide an effective supplement.

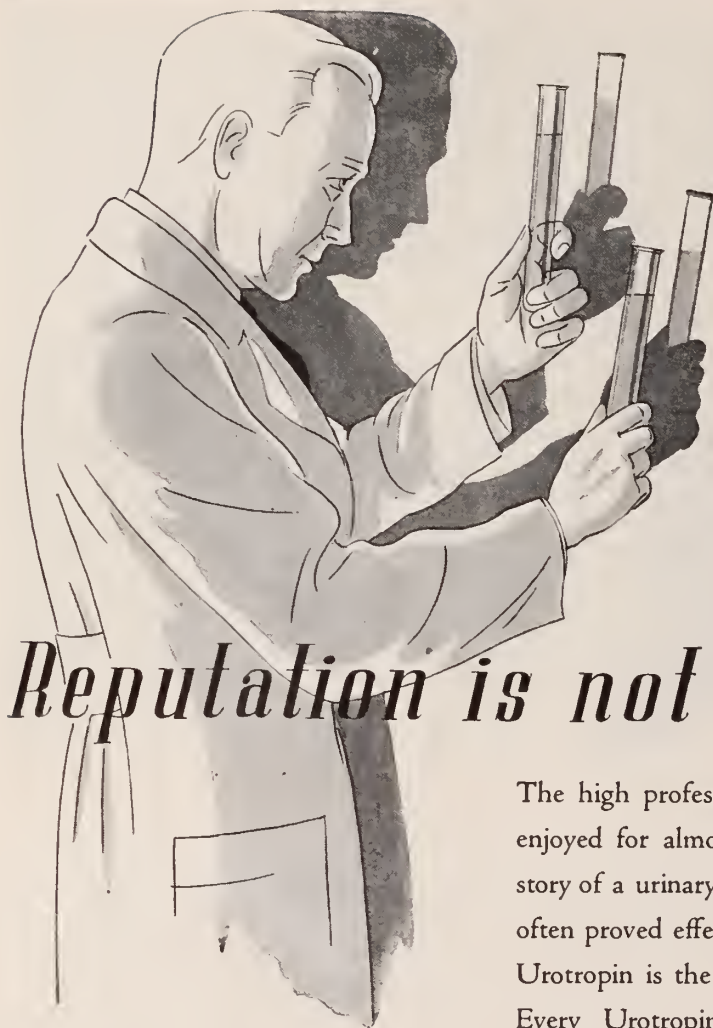
Dicalcium Phosphate Compound with Viosterol Squibb finds particular application

in certain dermatological and allergic conditions, in hepatic disease including jaundice, in lead poisoning, as well as during pregnancy, lactation and early childhood.

Dicalcium Phosphate Compound with Viosterol Squibb supplies calcium, phosphorus and Vitamin D in therapeutically effective quantities. One tablet (or two capsules) contains 9 grains dicalcium phosphate, 6 grains calcium gluconate and 660 U. S. P. XI units of Vitamin D. The tablets are flavored with wintergreen and have a very pleasant taste. The capsules are useful during pregnancy or as an alternative dosage form. Capsules are available in bottles of 100 and 1000; tablets in boxes of 51 and 250.

*For literature address the Professional Service Department
 E. R. Squibb & Sons, 745 Fifth Avenue, New York, N. Y.*

**SQUIBB DICALCIUM PHOSPHATE
 COMPOUND *with* VIOSTEROL** TABLETS
 CAPSULES



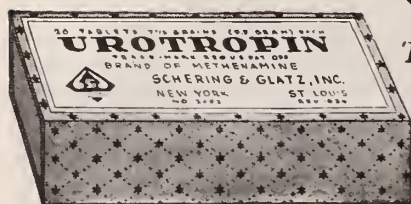
Reputation is not accidental

The high professional regard that Urotropin has enjoyed for almost half a century is the success story of a urinary antiseptic that, used properly, has often proved effective where other measures failed. Urotropin is the S. & G. brand of methenamine. Every Urotropin tablet is embossed with the Schering & Glatz Quality Mark, to assure obtaining what you prescribe, and protected by sanitape against contamination and deteriorating influences.

Supplied in 5-grain tablets, 30 in a box; in 7½-grain tablets, 20 in a box. Also in bottles of 50, 100, 500 and 1000 tablets. A request on your letterhead will bring you a trial supply.

UROTROPIN

The name by which methenamine was introduced into medicine



SCHERING & GLATZ, INC.
113 West 18th Street
New York City

OBJECTIVE IMPROVEMENT



in Arthritis

● Ertron meets the patient's primary demand of arthritic therapy: it leads to rapid subsidence of pain, to improvement of appetite, to a greater sense of well-being, to a better psychic state through renewed hope. In addition it produces, in a goodly percentage of the patients treated, roentgenologically demonstrable objective improvement. Frequently calcium salts appear to be deposited in rarefied bone, joint spaces

become clearly demarked, exostoses are absorbed, the involved joint regains at least partly its former usefulness.

Ertron is high dosage vitamin D, prepared by a unique process which is distinctly its own. Contrary to other preparations, it has never been reported to induce hypercalcemia. It is available in bottles of 100 capsules, containing not less than 50,000 I.U. of vitamin D each.

NUTRITION RESEARCH LABORATORIES, Inc.
 332 SOUTH MICHIGAN AVENUE . CHICAGO, ILL.

ERTRON

Once there were 3 little girls ...



ONE LITTLE GIRL was on a formula built, above all else, for *digestibility's* sake—and she did well.

Another was on a formula constructed for *analysis* similarity to breast milk—and she did well, too.

The third little girl was on BIOLAC, the new liquid modified milk for infants—and she did the best of the three.

Which is not surprising. For BIOLAC achieves both *digestional and nutritional* resemblance to breast milk through the use of principles never before combined in a *single* infant food.

These principles include the need for higher protein and reduced fat levels, because of the *biological* differences between cow's milk and

breast milk. They include, too, supplementation with iron and vitamins A, B₁, and D, and processing to assure ready digestibility. But that's not all . . .

Only the Breast Is Simpler or Quicker Than BIOLAC

Here's all there is to feeding BIOLAC at any age:

Dilute BIOLAC with an equal part of boiled water. Offer 2½ ounces per pound of body weight daily. (More dilute formulas are, of course, recommended during the newborn period or when changing from other foods.)

BIOLAC is marketed only through professional channels, sold only in drug stores. No feeding directions are given to the laity. Send coupon for further information.

Biolac



MADE BY
THE BORDEN COMPANY

THE BORDEN COMPANY,
Prescription Products Division, Dept. I-99-L,
350 Madison Avenue, New York, N. Y.

Please send me without obligation a copy of "Biolac, a New Liquid Modified Milk for Infants."

Name

Address

City State

THE SOURCE of a report counts as much as the findings. Observe the reputable sources of the studies listed below...*on the irritant properties of cigarette smoke.* May we send you a set of reprints?

PHILIP MORRIS & CO. LTD., INC., 119 FIFTH AVENUE, NEW YORK

Please send me copies of the reprints checked.

- ☐ Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245—"Pharmacology of Inflammation: III. Influence of Hygroscopic Agents on Irritation From Cigarette Smoke."
- ☐ N. Y. State Jour. Med. 1935, 35-No. 11,590—"Irritating Properties of Cigarette Smoke as Influenced by Hygroscopic Agents."
- ☐ Laryngoscope, 1935, XLV, No. 2, 149-154—"Some Clinical Observations on the Influence of Certain Hygroscopic Agents in Cigarettes."
- ☐ Laryngoscope, 1937, XLVII, 58-60—"Further Clinical Observations on the Influence of Hygroscopic Agents in Cigarettes."

NAME _____ ADDRESS _____

CITY _____ STATE _____

ILL.

Physician's Prerogative

To prescribe medication for the sick should be the physician's exclusive right. Eli Lilly and Company leaves no stone unturned in the effort to provide more nearly perfect pharmaceutical and biological preparations but with equal care limits dissemination of information concerning its products in order to assure their use under the physician's direction.



'LEXTRON' (Liver-Stomach Concentrate with Ferric Iron and Vitamin B Complex, Lilly) is effective in all anemias that can be successfully treated with liver extract or with iron. The factors necessary for erythrocyte formation and hemoglobin regeneration are liberally supplied by this preparation.

'Lextron' is packaged in bottles of 84 and 500 pulvules (filled capsules).

ELI LILLY AND COMPANY
INDIANAPOLIS, INDIANA, U. S. A.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 76

OAK PARK, ILL., SEPTEMBER, 1939

No. 3

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

GENERAL OFFICERS, 1939-1940

PRESIDENT.....JAMES H. HUTTON, Chicago
PRESIDENT-ELECT.....J. S. TEMPLETON, Pinckneyville
1ST VICE-PRESIDENT.....J. S. LUNDHOLM, Rockford
2ND VICE-PRESIDENT.....F. H. MULLER, Chicago
SECRETARY.....HAROLD M. CAMP, Monmouth
TREASURER.....A. J. MARKLEY, Belvidere

THE COUNCIL

E. H. Weld.....1st District, Rockford 1941
E. C. Cook.....2nd District, Mendota1941
J. S. Nagel.....3rd District, Chicago1940
L. E. Day.....3rd District, Chicago1942
Percy E. Hopkins...3rd District, Chicago1941
E. P. Coleman.....4th District, Canton1940
Ralph P. Peairs.....5th District, Normal1940
T. B. Knox.....6th District, Quincy1942
I. H. Neece.....7th District, Decatur1940
C. E. Wilkinson.....8th District, Danville1940
Andy Hall.....9th District, Mt. Vernon...1942
Henry G. Horstman.10th District, Murphysboro ...1942
Edw. S. Hamilton...11th District, Kankakee1941
S. E. Munson.....At Large, Chicago1942
Rolland L. Green...At Large, Peoria1940
Rollo K. Packard...At Large, Chicago1941
Chairman of the Council.....L. E. Day, Chicago

EDITOR

CHARLES J. WHALEN.....25 E. Washington St., Chicago

GENERAL COUNSEL

EDWIN W. RAWLINS.....77 West Washington St., Chicago

LEGISLATIVE COMMITTEE

JOHN R. NEAL, *Chairman*.....Springfield

MEDICO-LEGAL COMMITTEE

J. R. BALLINGER, *Chairman*.....2724 W. North Ave., Chicago
R. O. HAWTHORNE, *Secretary*.....Kankakee

EDUCATION COMMITTEE

R. R. FERGUSON, *Chairman*...4013 N. Milwaukee Ave., Chicago
Miss JEAN McARTHUR, *Secretary*. 30 N. Michigan Ave., Chicago

PERMANENT HISTORIAN

IRVING S. CUTTER.....301 East Chicago Ave., Chicago

SCIENTIFIC SERVICE COMMITTEE

ROBERT S. BERGHOFF, *Chairman*..30 N. Michigan Ave., Chicago
HAROLD M. CAMP, *Secretary*.....Monmouth

PUBLICATION COMMITTEE

HARRY J. STEWART, *Secretary*.....715 Lake St., Oak Park

Outside of editorial or allied views or statements that are the authoritative actions of the Illinois State Medical Society, the organization denies responsibility for opinions and statements published in the ILLINOIS MEDICAL JOURNAL. Views expressed by the various authors and views set forth in various departments in the JOURNAL represent the views of the writers.

State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original article, advertising copy, cuts and all communications relating to advertising to ILLINOIS MEDICAL JOURNAL, 30 N. Michigan Avenue, Chicago.

Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is \$3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. \$4.00 per year for all foreign countries included in the postal union. Canada, \$3.50. Single current copies, 50 cents.

Editorials

STATE MEDICINE A POLITICAL FOOTBALL

State Medicine invariably becomes involved in politics making the health of the nation a political football to be used by the particular party or clique which happens to be in control.

The whole theory of State Medicine or compulsory insurance is unsound economically. There has not yet been a scheme of State Medicine put into practice which gives good care to the indigent. They all apply only to those having employment. The fact is, that those who are employed could pay for their own medical care if they put their health before their pleasures and luxuries. The average family in America today pays more for tobacco alone, more for candy alone, more for liquor alone, than it pays to its family physician. The truth of this statement was very aptly expressed by Congressman Pettengill when he said, "We might as well look the fact squarely in the face that the drive for State Medicine finds its chief motive power in the desire to shift the economic burden involved from the shirker to the worker; the shiftless to the thrifty; the waster to the saver; the unfortunate to the fortunate; the drunkard to the sober; in short, to reap where others have sown."

Hubbard Prather Saunders, M. D.

(In Peoria Medical News).

CANCER IS CURABLE

The American College of Surgeons at the end of 1938 listed 29,195 people as cured of cancer. Cancer is costing the country \$900,000,000 a year. Education of the public relative to the curability of cancer began in earnest only within the past few years. That a great deal of education still remains to be done was revealed recently by a survey of the American Institute of Public Opinion. This survey showed that more than one of every three Americans did not know that cancer is curable, if treated in time. Forty-one per cent thought cancer is contagious; and as to be expected, 75 per cent of the people

polled feared cancer more than any other disease. The public first began to learn of the curability of cancer when the American College of Surgeons conducted "Cancer Is Curable" symposium at their annual meeting in 1932. At the 1932 Congress thirty distinguished surgeons reported 8840 cancer cures with no recurrence of the disease five or more years after operation. Early diagnosis and treatment made the cures possible. Cancer is not likely to recur if there is no evidence of it after two years, and five years is set as an almost safety index.

The publicity resulting from the symposium conducted by the American College of Surgeons in 1932, removed inhibition about cancer and cancer cures. Shortly thereafter, lay education on symptoms and urgent need of prompt diagnosis and treatment received an impetus that has been carried through to the present time.

Through the public press, radio talks, lectures and other means of publicity intensive cancer campaigns have been carried on in every State. The campaign of publicity has in a large measure dispelled the fear that has hampered the efforts of doctors in the past. Twenty-nine thousand, one hundred and ninety five former victims of this disease is sufficient proof that cancer can be cured.

URGENT NEED FOR A UNITED PROFESSION

Medical conditions demand far seeing leadership. If medical integrity is to survive, its course must be steered off the rocky shoals of state and government dictatorship and competition. In union there is strength, if organized medicine will present a united front success is sure to crown the effort.

Not a home in the Nation that is not reached by some doctor during the course of the year; perhaps not an individual in the United States who is not met face to face and engaged in personal conversation by one of the medical or allied professions in a given twelve months.

What a power, if organized, would be the doctors and allied professions of the United States in combating medicinizing socialization schemes, regimentation of the profession, government dictation and practice of medicine, government in every kind of business and profession, scheme for health centers, clinics, health insurance and other tax supported medical service schemes.

Items that are of vital importance in helping to preserve future medical stability and to which we should direct our thoughts and best efforts are:

(1) That we continue in the future as we have in the past to fight for the economic welfare of the physician.

(2) That we lose no opportunity to advance the influence of organized medicine in civic affairs.

(3) That we build up the membership of organized medicine to the point of including all the ethical, legitimate doctors in the National organization.

(4) That we continue to oppose dictation, in any form, of the practice of medicine by lay organizations, as well as attempts by individuals, medical schools, institutions or corporations to supplant physicians in medical affairs or to compete with doctors in the practice of medicine, surgery and the specialties.

(5) That we promote efficiency in medical practice and the highest attainment possible in medical science.

(6) That we advocate unceasing activity on the part of the individual physician in order to secure the economic betterment and stability of organized medicine as well as individual members that make up the parent organization.

(7) That we stand four square for the conservation of the ideals and interests of doctors both individually and collectively.

(8) That we develop to the ninth degree contacts and relationships with civic bodies, to the end that we may be able to give them expert assistance and advice, and be able to explain to welfare units conclusions based on experience rather than on theory.

(9) That there should be an awakening to the fact that federal aid, lay interference and bureaucratic control are too big a price to pay in return for what we get.

(10) That we are whole-heartedly in favor of rigid enforcements of the code of ethics relative to publicity and propaganda, etc., by institutions, corporations, philanthropic or otherwise as is rigidly enforced upon individual physicians.

(11) That we emphatically maintain, that the legitimate function of organized society is limited to public health activities, the teaching of personal hygiene, rendering medical service to the inmates of charitable and penal institu-

tions and education of the public along the line of disease prevention.

(12) That we unreservedly deplore lay dictation and practice of medicine as being both an absurdity and an anomaly; that the care of the sick should be strictly under the supervision of scientific trained men; that the treatment of the sick is strictly a problem of the medical profession.

(13) That we are primarily opposed to any plan for giving medical service that brings into the picture of medical practice business methods and commercialism which are fatal to medical science and to any setup of medical service that will break down the relationship between doctor and patient or to any plan which will deteriorate medical service, inhibit medical advancements, and break down confidence in the medical profession.

(14) That we oppose any form of tax supported medicine which take increasingly from the individual more and more of the responsibility for his own existence and which enter increasingly into the affairs of human life.

(15) And finally, it must be universally understood, that there can be but one master in the house of medicine and that is the doctor himself.

MEDICAL WRITING, THE TECHNIQUE AND ART

Dr. Morris Fishbein in a useful and condensed handbook entitled "Medical Writing, the Technique and Art," recently off the press, tells why papers sent for publications are so frequently rejected. Want of space, subject overworked, too theoretical, are given as the most frequent reasons for rejection. If you have delivered an address before a medical society, it is apt to be prolix, wordy and hastily assembled—perhaps just a pot boiler gotten together for reading rather than printing. Such a paper is likely to meet the same fate. Dr. Fishbein thinks that "a manuscript that is fit to be read is sometimes fit to print, but that a manuscript fit to print is always fit to read." The editor does not like long papers and he devotes a whole chapter of his book to showing *how, by careful revision, most papers can be reduced by at least twenty-five per cent.*

"In his chapter on style the author enjoins simplicity and clearness, in his discussion of subject and material he gives admirable advice. par-

ticularly elaborating the preparation of the now much neglected case report. He discusses the detailed construction of the manuscript, title, words and phrases, spelling, capitalization, abbreviations, numbers, proper usage in the manner of pharmaceutical products and prescriptions, and how to secure a bibliography. With considerable detail he goes into the mechanical preparations of manuscripts, illustrations, charts, and tables. The author concludes with emphasis upon the importance of the revision of papers to be submitted for publication, *telling us that Sir William Osler always made at least three drafts of a manuscript, Sir Clifford Albutt four, and Anatole France eight, and leaving us with the impression that he rather agrees with Trelease and Yule who recommend ten revisions before submitting the result to the printer.*" (Italics Ours)

ILLINOIS PHYSICIANS PARTICIPATING IN THE A. M. A. SCIENTIFIC PROGRAM

The following Illinois physicians participated in the scientific program at the A. M. A. St. Louis convention, naming them as they appeared on the program:

Ernest E. Irons, moderator, discussion on Pneumonia; O. H. Robertson, etiology, experimental and general, pathology (infection; mechanism of invasion; bacteremia, variations, types, significance in relation to therapy).

Andrew C. Ivy; physiology of the Biliary Tract.

N. C. Gilbert, chairman, section on Practice of Medicine, and delivered the chairman's address for the section.

Emil Schleicher, a paper on "The Reaction of Periphery Blood and Bone Marrow in Chronic Hemorrhage and in Essential Thrombocytopenic Purpura" (lantern demonstration).

George K. Fenn, "The Mechanism of Death in Pulmonary Embolism" (lantern demonstration).

Clarence F. G. Brown, "An evaluation of Therapy of Peptic Ulcer."

M. Herbert Baker, "Treatment of Pneumonia" (lantern demonstration). Paul S. Rhoads discussed Dr. Baker's paper.

Loyal Davis & John Martin, "Surgical Lesions in the Paratrigenal Area" (lantern demonstration).

Geza de Takats. Discussed a paper on "Throm-

bophlebitis: The Etiologic Factor of Vasospasm and the Treatment by Sympathetic Block" (lantern demonstration).

Lester R. Dragstedt. Discussed a paper on "The Immediate and Late Results of Surgical Treatment of Acute Perforations of Peptic Ulcer" (lantern demonstration).

Fred L. Adair and M. Edward Davis, presented a paper on "Atrophy of the Vulva" (lantern demonstration).

Charles E. Galloway. Discussed a paper on "The Responsibility of the Medical Profession in the Movement of Birth Control."

Franklin F. Snyder. Discussed a paper on "The Effects of Obstetric Analgesia on the New Born Infant" (lantern demonstration).

George H. Gardner. Discussed a paper on "Post Operative Care of the Urinary Bladder" (lantern demonstration).

Bernard Portis and Harold A. Roth. Presented a paper on "Diagnosis and Treatment of Hyperthyroidism."

F. H. Falls. Discussed the paper of Drs. Portis and Roth.

Edward D. Allen. Discussed a paper on "Urinary Incontinence and Relation to Cystocele" (lantern demonstration).

Sanford R. Gifford. Discussed a paper on "The Treatment of Secondary Glaucoma" (lantern demonstration).

Harry S. Gradle. Discussed a paper on "The Value of Early Operation in Chronic Primary Glaucoma" (lantern demonstration).

Percival Bailey. Discussed a paper on "Primary Tumors of the Optic Nerve: A Phenomenon of von Recklinghausen's Disease; a Clinical and Pathologic Study with a Report of Five Cases and a Review of the Literature" (lantern demonstration).

James E. Lebensohn. Discussed a paper on "Cataract Following Inhalation of Paradichlorobenzene" (lantern demonstration).

Edward V. L. Brown. Discussed a paper on "Ophthalmology's Place in the Prevention of Blindness."

Frank J. Novak, Jr. Discussed a paper on "Argyria Resulting from Intranasal Medication" (lantern demonstration).

Howard C. Ballenger. Discussed a paper on "Infection of the Mouth and Face" (lantern demonstration).

George E. Shambaugh, Jr. Presented a paper

on "Diploacusis: A Localizing Symptom for Disease of the Organ of Corti; Theoretical Considerations, Clinical Observations and Practical Application" (lantern demonstration).

Heyworth N. Sanford. Presented a paper on "The Effect of Various Complementary Feedings on the Gain in Weight and Stimulation of Breast Milk During the Newborn Period" (lantern demonstration).

Willard O. Thompson and Norris J. Heckel. "Treatment with Male Sex Hormones." F. C. Koch, discussed the Thompson-Heckel paper.

Clarence F. G. Brown. Presented a paper on "An Evaluation of Therapy of Peptic Ulcer."

M. Herbert Baker. Presented a paper on "Treatment of Pneumonia" (lantern demonstration).

J. P. Simonds. Presented a paper on "Experimental Studies on the Pathogenesis of Nephritis" (lantern demonstration).

Richard B. Richter. Discussed a paper on "The Neurotropic Viruses" (lantern demonstration).

Arthur Weil. Discussed a paper on "Clinical Aspects of Vitamin B Deficiencies" (lantern demonstration).

George W. Hall. Discussed a paper on "The Post-Traumatic Psychoneurotic State and Traumatic Encephalopathy" (lantern demonstration).

David Slight. Discussed a paper on "The Differential Diagnosis of Anxiety Neurosis."

H. T. Carmichael and J. H. Massermann. Presented a paper on "Results of Treatment in a Psychiatric Outpatient Department" (lantern demonstration).

L. J. Pollock. Discussed paper on "Delayed Paralysis of Nerves from Indirect Trauma."

Kathleen B. Muir, Evangeline Stenhouse and S. William Becker. Presented a paper on "The Action of Sodium Thiosulfate, Thiophenylsulfonic Acid and Formaldehyde Sulfoxylate in Arsenical and Mercurial Poisoning in Rabbits."

Theodore Cornbleet. Presented a paper on "Sugar Metabolism of the Skin" (lantern demonstration).

James Herbert Mitchell. Discussed a paper on "Dermatitis of the Ear."

Francis E. Senear. Discussed a paper on "The Senear-Usher Syndrome."

Charles M. McKenna. Presented a paper on "Hypospadias (in the Male): The Operative Technic for the Correction of Penile Deformity

and Reconstruction of the Urethra" (lantern demonstration).

Herman L. Kretchmer and Ralph C. Brown. Presented a paper on "Do Alkalis Used in the Treatment of Peptic Ulcer Cause Kidney Stones" (lantern demonstration).

E. J. Berkheiser. Presented a paper on "Excision of Patella in Cases of Hypertrophic Arthritis" (lantern demonstration).

Fremont A. Chandler and John R. Norcross. Presented a paper on "Sympathicoblatoma; A Report of Four Cases."

Edward L. Compere, Samuel W. Banks and William N. Krigsten. Presented a paper on "Regeneration of the Growth Epiphyses of Long Bones" (lantern demonstration).

Philip Lewin. Discussed a paper on "Low Back Pain: Correlation of the Signs and Symptoms of the Various Noninfectious Lesions" (lantern demonstration).

Edwin W. Ryerson. Presented a paper on "Excision of Scapula; Report of a Case Showing Excellent Functional Result" (lantern demonstration).

Walter L. Palmer. Discussion of a paper on "The Use of Hydrated Trisilicate of Magnesium for Peptic Ulcer."

Edward L. Jenkinson and Arthur F. Hunter. Presented a paper on "Bronchiogenic Carcinoma: A Diagnostic Enigma" (lantern demonstration).

Charles J. Betlach. Discussion of a paper "The Effect of Certain Anesthetics on the Blood."

OBSTETRICAL DEFINITION

(Formulated by The American Public Health Association and Endorsed by The Committee on Neonatal Morbidity and Mortality of The American Pediatric Society.)

1. Complete birth. A birth is complete the very instant of complete separation of the body of the infant from the body of its mother (regardless of whether or not the cord is cut, or the placenta detached).

2. Live birth. An infant exhibiting life after a "complete birth." The three evidences of life are: (a) breathing, (b) heart action or (c) movements of a voluntary muscle.

3. Still birth. An infant which does not exhibit evidence of life after a "complete birth": (no breathing, no heart action or no movement of a voluntary muscle).

4. Abortion. Any product of conception less than 28 weeks' duration, measuring 35 cm. or less, and weighing less than 1,500 grams (3¼ lb.).

5. Premature infant. An infant with a birth weight of 2,500 grams (5½ lb.) or less, with a "crown-heel" length of 47 cm. or less and a gestation of 37 weeks or less; the birth weight being the most important factor.

6. Neonatal period. The first 30 days of the infant's life. It is during these first 30 days that the mortality of all infant deaths under one year is the greatest (67 per cent). The usual causes, usually preventable, are prematurity, birth injuries and sepsis.

ANTEPARTUM CARE: CLINICAL LECTURE AT SAN FRANCISCO SESSION

Otto H. Schwarz, St. Louis (Journal A. M. A., Oct. 15, 1938), emphasizes the more important points that antepartum care involves. It is obvious that the patient must report as early as possible in pregnancy. A thorough general physical examination should be carried out early in pregnancy in order to recognize or eliminate medical complications. The medical complications that give most concern are heart disease, tuberculosis, diabetes and hyperthyroidism. They are in themselves problems, but superimposed on pregnancy they represent a serious picture and each case becomes an individual problem which must be carefully managed. Repeated pregnancies with medical complications should definitely be avoided. Although the mother may go through one pregnancy with little additional risk, this does not usually hold for repeated pregnancies. It is important to recognize pelvic abnormalities early in pregnancy; not only the contracted pelvis but the presence of pelvic tumors should be determined because, if intervention is indicated, they can best be handled early in pregnancy. The prevention of serious cases of toxemia of pregnancy and eclampsia can be readily accomplished by the proper antepartum care.

THE CHEMISTRY OF VITAMIN C

C. G. King, Pittsburgh (Journal A. M. A., Oct. 15, 1938), states that a primary requisite for studying the chemical nature of vitamin C was provided by Holst and Frölich when they observed that the guinea pig could be used as an experimental animal for the study of scurvy. Attempts to isolate the vitamin from natural products encountered great difficulty because of its extreme sensitiveness to destruction by oxidation. Isolation of vitamin C resulted, in one laboratory, from four years of systematic fractionation of lemon juice, based entirely on biologic assays, and that in another laboratory biologic assay for vitamin function was reported five years subsequent to the isolation of the vitamin as hexuronic acid, a silver nitrate-reducing agent in tissues, and two years after its negative assay as a hormone. The structural formula of the vitamin, type reactions and physicochemical properties are considered.

A two-year-old infant grew philosophical. "If I had my life to live over again," he remarked, "I would be a bottle baby so that there wouldn't be ashes falling into my eyes all the time."—*Med. World*.

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
Ralph Peairs, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

R. K. Packard, M. D.
C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

Address all letters and communications to the Chairman.

The reaction of the national press to the decision of Judge Proctor of The Federal District Court in Washington has been most favorable to the medical profession. The J. A. M. A. of August 12 presented editorials from different parts of the Nation and practically all of them agreed that the decision declaring the practice of medicine a profession and not a trade, was as expected and thereby the issue had been definitely clarified. Even the threat of reference to the Supreme Court has in no way changed the general impression that the medical profession has been exonerated of all suspicion of violation of the Sherman Act. One of the best articles on the decision was presented by *The United States News* of July 31 under the heading "Medicine Not a Trade—Anti-Trust Suit Checked." The first sentence read "The first important stop-sign in the Government's anti-trust crusade was a twelve page Federal Court decision." This was followed by a thorough review of the story of the suit and the reading of the article is well worth the time of any medical man interested in the details of the story. In other articles and editorials the opinion is quite freely expressed that the decision will have a salutatory effect on the other activities of the Anti-trust division of the Department of Justice.

If the decision has stopped further premature attempts to coerce the professions into friendly agreements entered into to avoid prosecution, or possibly persecutions as some of the articles intimated, the fight of the medical profession may eventually be one of the really important ones of this decade.

As intimated in the last article in this column, the plan of the Farm Security Administration in North Dakota for furnishing medical care to their clients in North Dakota has had considerable trouble and the opinion expressed by many of the thinking men of the profession that the money allotted was entirely inadequate has been verified. In order to save their face with the higher ups, as well as their

clients and possibly the medical profession of at least North Dakota, the annual allotment has been increased considerably and an attempt is now being made to reenlist the medical profession of the state in the new plan. That this is not meeting with the approval of all the medical profession of the state is proved by a letter published in *The Victor News* for August, 1939, on page 5. This letter will follow in this column, immediately after this article. The contents will definitely answer the question in the minds of many of us as to the success of the plan in North Dakota. On page 49 of *Modern Medicine* for August appears an article entitled "Local Treatment Versus National Panaceas," which tells the results of experiments in North Dakota, Wisconsin, California and Australia in furnishing the low income group with medical care either under governmental or medical society supervision. The article is most critical of the result obtained under governmental control. If this article is still available, take time to read it.

Another article containing food for thought as to results of Group Hospitalization plan is to be found on page 28 of the August issue of *Medical Economics* on the subject "The Crisis in Group Hospitalization." With the general acceptance of the plan by both the laity and the medical profession as well as the phenomenal growth of the associations, it is well to consider some of the apparent difficulties of the plan and its successful administration. It has been the common opinion of both its opponents and proponents that an epidemic similar to that of Influenza in 1918 would during the first few years of any such plan result in financial crises, more severe the sooner they arrived and the less the surplus funds available at that time. Few had considered the dangers discussed in this article, although from the start the majority of the medical profession had been opposed to the including of any form of medical care in the hospitalization plan. But apparently it has been

included in some of the plans with results exactly as feared by the medical profession.

Current medical journals continue to report various plans for furnishing medical care on a pre-payment plan in various parts of the nation. It is too early to report definitely on the success or failure of any plan. Many states are trying out several different plans in different cities within their boundaries and in the next few years they should be able to outline definite successful plans. In accord with the instructions received at the meeting of the House of Delegates in Rockford in May, 1939, this problem is receiving much study by several committees of the Illinois State Medical Society. Their conclusions will be correlated by a special Committee from the Medical Economics Committee who expect to have a definite report ready at the next meeting of the House. Meanwhile, plans in nearby states are being investigated either by correspondence or by visiting the same, so that the success or failure can be checked from all angles. Much of the time of the last meeting of the Council was given over to consideration of this problem. All of the time of the meeting of this Committee, which was held immediately following adjournment of the Council was given to this problem. We must remember that the American Medical Association report that there are over a thousand such plans in operation in the United States at this time. It is of course impossible to study all or even most of them, but enough can be studied to select the successful portions of the best plans to use the same in any plan to be outlined for consideration at the next annual meeting. If those of you, who have plans or ideas on the subject, will get in touch with some member of this committee, whose names will be found at the top of this column and talk over your ideas with said member, I am sure that it will be to the mutual advantage of all concerned.

Meanwhile, remember that your Senators and Representatives are at home looking over their political fences. Take time off and let them know that you are one of their constituents and that you have definite ideas as to what you want done down at Washington, particularly as it affects the medical profession. They will be glad to listen to you. That is one of the reasons they are home. But go to them prepared with

definite facts and reasons why Senate Bill 1620 should be defeated.

E. S. Hamilton, M. D.,
Chairman.

NORTH DAKOTA DOCTOR SPEAKS

To the Editor:

In your July number of VICTOR NEWS, under *News Flashes*, I notice an article with the heading of Washington, referring to the F. S. A. health program in North Dakota, and the concluding sentence, "North Dakota Medical men are reported eager to have the new plan start."

The propaganda put out by Washington nowadays from these various agencies under the federal government's supervision is each day resembling more and more the propaganda spread about by the dictator countries of Europe.

I venture to say that there is not one in ten M. D.'s in the state of North Dakota who is eager to have anything like the last F. S. A. setup start again in this state. We were only too glad to see that one come to an end, and are hoping that we shall never see the like again.

I just wanted to let you know how most of the doctors in North Dakota feel so that you will not be misled by articles such as that coming out of Washington. If they really want an opinion so that it can be published they might ask a few doctors of the state before drawing any hasty conclusions.

(Signed) R. D. Nierling, M. D.,
Jamestown, North Dakota.

Editor's Note: VICTOR NEWS is always glad to publish the opinions, such as Dr. Nierling's, of members of the medical profession concerning articles furnished to or prepared by us for publication.—Victor News, August, 1939.

Correspondence

THE COLUMNISTS COMMENT ON THE ARNOLD PRONUNCIAMENTO

Paul Mallon, widely circulated by King Features Syndicate, in his column *News Behind the News*, after describing the case and stating that if the American Medical Association is a monopoly so is the American Bar Association, says that this suit—

would simply mean the Justice Department is misnamed and has become instead a prosecution department to enforce, not alone the law, but social and economic theories.

Mr. Mallon also indicated that application of this principle would mean that newspaper correspondents might object because some of them cannot get into the press galleries of Congress, and the attendance on the President's press conferences is also strictly limited. Those who can get in have a great commercial advantage over those who cannot.

David Lawrence, widely syndicated, feels that—

the doctors have a society which is as much entitled to protection under the Wagner Relations Act as any other association.

After explaining his view that the Department of Justice has intervened principally to help the Group Health Association, Inc., Mr. Lawrence says,

The attempt to drag the antitrust laws into a controversy over what is or is not proper medical care is a piece of amazing political stupidity, but it is another example of how the zealots in the administration, with the full approval of President Roosevelt, are manipulating the laws of the United States to gain the goals of their so-called social experiments.

Mrs. Walter Ferguson, after explaining the nature of the controversy in Washington, says:

The average layman holds himself aloof from the controversy about his welfare now raging between the federal government and the American Medical Association.

If he is a middle-class citizen, he considers himself a martyr and is fond of saying that only the very rich and the very poor receive any consideration from doctors—although I doubt whether he would be willing to exchange places with the poor.

If we are honest, we must admit that our attitude toward the doctor has always been irritable and without consistency. We're ready to spend money on everything except our health. Most families will make any sacrifice to buy an automobile on the instalment plan, while they feel much aggrieved if they have to invest monthly sums to pay for medical attention which may have kept one of them out of the grave.

In the Baltimore *Sun* Mr. Henry L. Mencken says:

A defect common to all the plans so far proposed is that they are confined to employed persons and offer no aid to the unemployed. The latter are thus thrown on the free clinics, which are mainly manned by doctors who get nothing for their work.

This puts a very heavy burden on the medical profession, and there are doctors who begin to find it almost intolerable. Proposals have been made that the federal government offer them some remuneration, and no doubt this will be done as soon as the New Deal wizards can get around to it.

But whether the doctors will accept remains to be seen. Most of them are unalterably opposed to going on the public pay roll and so submitting their work and their fortunes to the will and whim of politicians.

Their opposition is hardly likely to be lessened by the fact that all the Communist organs have begun a violent campaign against them, denouncing them as sharks and scoundrels. Or by the fact that the New Deal has now joined in.

Bugs Baer, in a few succinct sentences, puts his finger squarely on the political motives involved in the attempt to make medical care the issue in future political campaigns:

The doctors don't approve of the federal health plan subject to a prescription by thirty-six states. A Democratic pharmacist deciphering a Republican doctor's diagnosis might mix in too much filibuster and not enough relief.

Health shouldn't be subject to politics. And when we're sick we don't want the opposition voting on it.

The insurance companies are nonpartisan. They pay off like a slot machine either way.

Journal A. M. A. August 13, 1939, says:

Elsewhere in this issue appear editorials published in various newspapers relative to the pronunciamento of Thurman Arnold, who proposes to determine whether or not the American Medical Association is a monopoly. Seldom has an action taken by the Department of Justice aroused the public interest and attention developed by this action. In addition to the editorials which have appeared in the newspapers, practically every one of the columnists syndicated in newspapers throughout the country has had something to say on the subject.

APPROVED LABORATORIES

To the Editor:

Enclosed is a copy of the text of (1) the new law requiring physicians to take blood specimens for tests for syphilis from all pregnant women under their professional care and (2) the amended law requiring pre-nuptial physical examinations. Also enclosed is a list of approved diagnostic laboratories.

May I suggest that you publish the text of both laws and the list of approved laboratories in an early issue of the JOURNAL.

First, all laboratory tests required by these laws, in order to be valid, must be made in laboratories *approved* for that purpose by the State Department of Public Health and the kind of test must be one approved by that Department. *Second*, all cases of infection detected must be reported to the Department. *Third*, a marriage license may be issued to a person with evidence of infection which is considered non-communicable by the physician only with the approval of the State Director of Public Health who is required to investigate the situation before giving such approval. Exceptions to this are (1) pregnant women and (2) the mothers of living illegitimate children whose fathers are parties to the proposed marriages.

Physicians are required, moreover, to state in writing on each certificate of birth or stillbirth whether or not a blood test for syphilis was done on the mother of the child. This statement may be made on the margin of certificate forms now on hand. Future printings will have a special place and form for this statement.

I believe that to publish the texts of the two laws and to emphasize especially the points referred to above will be of considerable value to the medical profession of the State.

Thanking you for your consideration of this matter, I am

Very truly yours,

A. C. Baxter, M.D.,

Director of Public Health.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC HEALTH

August 5, 1939.

NEW LAWS FOR COMBATting SYPHILIS

A law requiring professional attendants to take blood specimens for laboratory tests for syphilis from pregnant women and an amendment to the law which requires pre-nuptial physical examinations were enacted

by the General Assembly which adjourned on June 30, 1939. Both of these laws are now in full force and effect. The text of each is reproduced below.

TEXT OF LAW ON PRENATAL BLOOD TESTS

Section 1. Every physician, or other person, attending in a professional capacity a pregnant woman in Illinois, shall take or cause to be taken a sample of blood of such woman at the time of the first examination. Said blood specimen shall be submitted to a laboratory approved by the State Department of Public Health for a serological test for syphilis approved by the State Department of Public Health. In the event that any such test shall show a positive or doubtful result a second test shall be made. Such serological test or tests shall, upon request of any physician in the State, be made free of charge by the State Department of Public Health or the Health Departments of cities, villages and incorporated towns maintaining Health Departments.

Sec. 2. In reporting every birth or still birth, physicians and others required to make such reports shall state on the birth certificate or still birth certificate, as the case may be, whether a blood test for syphilis has been made upon a specimen of blood taken from the woman who bore the child for which a birth or still birth certificate is filed, together with the date when the blood specimen was taken and the name of the laboratory making the test. In no event shall the birth or still birth certificate state the result of the test.

Sec. 3. This act shall be administered by the State Department of Public Health.

TEXT OF AMENDED LAW ON PRENUPTIAL EXAMINATIONS

Section 1. Section 6a of "An Act to revise the law in relation to marriages," approved February 27, 1874, as amended, is amended to read as follows:

Sec. 6a. All persons making application for a license to marry shall at any time within fifteen (15) days prior to such application be examined by a physician duly licensed in this State as to the existence of or freedom from any venereal disease, and, except as otherwise herein provided, it shall be unlawful for the county clerk of any county to issue a license to marry to any person who fails to present for filing with such county clerk a certificate signed by such physician setting forth that such person to the proposed marriage is free from venereal diseases as nearly as can be determined by a thorough physical examination and such standard microscopic and serological tests as are necessary for the discovery of venereal diseases. If, on the basis of negative laboratory and clinical findings the physician in attendance finds no evidence of venereal diseases, he shall issue a certificate to that effect to the examinee, which certificate shall read as follows, to-wit:

I, (Name of Physician).....being a physician, legally licensed to practice in the State of..... (my credentials being filed in the office of..... in the City ofCounty ofState of) do certify that I did on the day of, 19...., make a thorough examination of and considered the result of a microscopic examination for gonococci

and an approved serological test for syphilis, which was made at my request, and believe.....
to be free from all venereal diseases.

.....,

Signature of Physician.

Such certificate of negative findings as to each of the parties to a proposed marriage to which laboratory reports of microscopical examinations of smears from the genitalia for the gonococcus of gonorrhea and serologic tests for syphilis are attached, shall be filed with the county clerk of the county wherein the marriage is to be solemnized at the time application is made for a license to marry. Laboratory tests for venereal diseases required hereunder shall be tests approved by the State Department of Public Health and shall be made by laboratories of said Department or by such other laboratories as are approved by said Department. Such tests as may be made by the health departments of cities, villages and incorporated towns maintaining laboratories shall be free of charge. The results of all laboratory tests shall be reported on standard forms prescribed by the State Department of Public Health.

Irrespective of the results of laboratory tests and clinical examination, the clerks of the respective counties shall issue a marriage license to parties to a proposed marriage (a) when the woman is pregnant at the time of such application, and (b) when the woman has, prior to the time of application, given birth to an illegitimate child which is living at the time of such application and the man making such application makes affidavit that he is the father of such illegitimate child. The county clerk shall, in lieu of the health certificate required hereunder, accept, as the case may be, either an affidavit on a form prescribed by the State Department of Public Health, signed by a physician duly licensed in this State, stating that the woman is pregnant, or a copy of the birth record of the illegitimate child, if one is available in this State, or if such birth record is not available, an affidavit signed by the woman that she is the mother of such child.

Also irrespective of the results of laboratory tests and clinical examination, the clerks of the respective counties shall issue a marriage license to parties to a proposed marriage when, after investigation, the Director of the State Department of Public Health, or his duly authorized representative, issues or causes to be issued a certificate that such marriage may be consummated without serious danger to the health of either party to the proposed marriage or to any issue of such marriage.

Any county clerk who shall unlawfully issue a license to marry to any person who fails to present for filing the certificate provided for in this Act or who shall refuse to issue a license to marry to any person legally entitled thereto under this Act, or any physician who shall knowingly and wilfully make any false statement in the certificate, or any party or parties having knowledge of any matter relating or pertaining to the examination of any applicant for license to marry, who shall disclose the same, or any portion thereof, except as may be required by law, shall upon proof thereof be

punished by a fine of not less than \$100.00 nor more than \$500.00 for each and every offense.

Any person who shall obtain any license to marry contrary to the provisions of this section shall, upon conviction thereof, be punished by a fine of not less than \$100.00 or by imprisonment in the county jail for not less than three (3) months or by both such fine and imprisonment.

Any license to marry issued hereunder, shall be void thirty (30) days after the date thereof.

APPROVED DIAGNOSTIC LABORATORIES

The diagnostic laboratories at the institutions listed below have been approved by the State Department of Public Health of Illinois for making the Kahn blood test for syphilis and microscopic examinations of smears for gonococci:

entitled thereto under this Act, or any physician who

Alton—Memorial Hospital, Rock Springs Drive; St. Joseph's Hospital, 915 E. Fifth St.

Belleville—St. Elizabeth's Hospital, 328 West Lincoln.

Cairo—St. Mary's Hospital, 2025 Walnut Street.

Canton—The Coleman Clinic, 24 N. Main Street.

Danville—Lake View Hospital, 812 N. Logan Street.

Decatur—Decatur and Macon County Hospital, End of N. Edward Street; St. Mary's Hospital, 220 South Webster Street.

E. St. Louis—East Side Health Dist., 325 East Broadway; St. Mary's Hospital Clin. Lab., 129 North 8th Street.

Elmhurst—Elmhurst Com. Hospital, 189 Avon Road.

Evanston—Church St. Clin. Lab., 636 Church Street; City Health Department, 1806 Maple Avenue; Evanston Hospital, 2650 Ridge Avenue.

Freeport—Deaconess Hospital, 420 S. Harlem Avenue.

Highland Pk.—Highland Pk. Hospital, 645 Homewood Avenue.

Jacksonville—Our Savior's Hospital, 446 East State Street.

Joliet—Prescription Shop Lab., 317 Morris Building.

Joliet—St. Joseph's Hospital, 372 N. Broadway.

Melrose Pk.—Westlake Hospital, 612 N. 12th Avenue.

Moline—Lutheran Hospital, 5th Avenue and 5th Street.

Oak Park—L. R. Hill Clin. Lab., 1011 Lake Street; Oak Park Hospital, 525 Wisconsin Avenue; West Suburban Hospital, 518 N. Austin Blvd.

Ottawa—Ottawa Clinical Lab., 112 Madison Street; Ryburn Memorial Hospital, 701 Clinton Street.

Peoria—Caterpillar Tr. Co. Lab., East Washington Street; Collins Clinic Lab., 427 Jefferson Building; Methodist Hospital, 221 N. Glen Oak Avenue.

Quincy—Quincy Clinic Lab., 1416 Maine Street.

Robinson—Brooks & Teasley Clin., New Otley Building.

Rockford—Rockford Health Dept., Walnut and First Streets; Rockford Hospital, Court and Chestnut Streets.

Springfield—St. John's Hospital, 7th and Mason Streets.

Urbana—Mercy Hospital Clin. Lab., Wright and Park Streets.

Waukegan—Victory Memorial Hospital, 1324 Sheridan Road.

CHICAGO

Acme Clinical Laboratory, 7910 S. Cottage Grove Avenue.

American Hospital Laboratory, 850 West Irving Park Blvd.

Augustana Hospital Pathology Lab., 411 Dickens Avenue.

Belmont Hospital Laboratory, 4058 Melrose Avenue.

Bethany Sanitarium and Hospital Lab., 3420 West Van Buren Street.

Burlington Medical Dept. Lab., 547 Jackson Blvd.

Central X-ray and Clinical Lab., 58 East Washington Street.

Chicago Board of Health Lab., 54 West Hubbard Street.

Chicago Laboratory, 25 East Washington Street.

Chicago Medical School Lab., 710 South Wolcott Avenue.

Children's Memorial Hospital Lab., 735 Fullerton Avenue.

Civic Medical Center of Chicago, 20 East Jackson Boulevard.

Clinical Laboratory, 1180 East 63rd Street.

Clinical and x-ray Laboratories, 818 East 47th Street.

Cook County Hospital Lab., 1828 West Polk Street.

Samuel Deutsch Serum Center Lab., 2912 Ellis Avenue.

Devon Laboratory, 6355 Broadway.

Edgewater Hospital Laboratory, 5700 North Ashland Avenue.

Englewood Hospital Laboratory, 6001 South Green Street.

Evangelical Hospital Laboratory, 5421 South Morgan Street.

Franklin Boulevard Hospital Lab., 3230 West Franklin Blvd.

Garfield Park Community Hospital Lab., 3821 West Washington Blvd.

Hyde Park Clinical Laboratory, 1525 East 53rd Street.

Illinois Central Hospital Lab., 5800 South Stony Island Ave.

Illinois Clinical Laboratory, 185 North Wabash Avenue.

Lawndale Laboratory, 3653 West 26th Street.

Lincoln Clinical & X-ray Lab., 2373 North Lincoln Avenue.

Lincoln Gardner Laboratory, 30 North Michigan Avenue.

Lutheran Deaconess Hospital Lab., 1138 North Leavitt Avenue.

Madison-Kedzie Clinical Lab., 9 South Kedzie Avenue.

Moore Clinical Laboratory, 55 East Washington Street.

Mt. Sinai Hospital Pathological Lab., 2750 West 15th Place.

John B. Murphy Hospital Lab., 620 West Belmont Avenue.

Northwestern Medical School Lab., 303 East Chicago Avenue.

Norwegian-American Hospital Lab., 1044 North Francisco Avenue.

Passavant Hospital Clinical Lab., 303 East Superior Street.

Quade Clinical and X-ray Lab., 6255 South Ashland Avenue.

Research & Educational Hosp. Lab., 808 South Wood Street.

St. Anne's Hospital Clinical Lab., 4950 Thomas Street.

St. Anthony dePadua Hospital Lab., 19th Street and Marshall Blvd.

St. Bernard's Hospital Laboratory, 6337 Harvard Avenue.

St. Elizabeth's Hospital Lab., 1431 North Claremont Avenue.

St. Luke's Hospital Laboratory, 1439 South Michigan Avenue.

St. Mary of Nazareth Hospital Lab., 1120 North Leavitt Avenue.

Scientific Pathological Lab., 6 North Michigan Avenue.

Walther Memorial Hospital Lab., 1116 North Kedzie Avenue.

Wesley Memorial Hospital Lab., 2449 South Dearborn Street.

Woodlawn Clinic Laboratory, 826 East 61st Street.

Woodlawn Hospital Laboratory, 6060 South Drexel Avenue.

New lists of approved laboratories will be published from time to time as others apply and qualify.

There are known to be 141 other local diagnostic laboratories which have not been approved. Of these 101 offer to do blood tests for syphilis and all, presumably, offer to do microscopic tests for gonorrhea.

The diagnostic laboratories of the State Department of Public Health have been approved by the National Institute of Health for doing all of the diagnostic tests offered.

CRITICISM OF THE WAGNER HOSPITAL BILL

The Journal of the American Medical Association offers the following criticism:

"Under section 1203 (a) (1), financial participation by the states is required. Naturally the extent of this participation will vary from state to state. Assuming, however, that the contributions of the Federal Government will be on a fifty-fifty basis, there will be available for the construction and improvement of government-owned general hospitals \$16,000,000 in the fiscal year ending June 30, 1940, \$100,000,000 in 1941 and \$200,000,000 in 1942. Taking \$4,000 as the average cost per bed of general hospitals, this bill would make provision for the addition of 4,000 general hospital beds in 1940,

25,000 general hospital beds in 1941 and 50,000 general hospital beds in 1942. These figures relate only to government owned hospitals and do not include such enterprises, public or private, as may be undertaken without the stimulus of a Federal subsidy.

"Over the eleven-year period 1928-1938 inclusive the average annual rate of increase in the number of beds in general hospitals was 1.9 per cent. The increases proposed in the Wagner Bill amount to a total of 79,000 beds, 16.2 per cent, in three years, or an average rate of increase of 5.4 per cent. In 1938 the general hospitals of the country were filled to 68.9 per cent of their capacity; 31.1 per cent of the beds were unused. Wherein lies the justification of the proposal to multiply threefold the normal increase of hospital facilities?"

"Section 1201 of the Wagner Bill, s. 1620 authorizes the appropriation in successive years of eight, fifty and one hundred million dollars, respectively, for the construction and improvement of general hospitals."

SOCIALIZED MEDICINE FROM A LAYMAN'S VIEW POINT

It would seem that Prof. Albert Gaylord Hart has overlooked some very important facts and some very serious objections to socialized medicine. Material things can be socialized, for good or for worse (mostly the latter), but brains and mental ability cannot.

Socialized medicine, for example, would only get the mediocre ability, or worse. No smart young man is going to spend the best years of his life studying medicine if he is denied his dream of fame and fortune.

The attempted prosecution of the American Medical Association was an ill-starred adventure and a criminal waste of taxpayers' money. If the same amount of money had been spent intelligently for medical service in state and county hospitals, or in municipal hospitals, the taxpayers' money would not have been spent in vain. Any bright young lawyer just out of law school knows why any professional association is not a trust or a monopoly under the statutes or within the meaning of the law.

It may be time to keep government doctors out of the American Medical Association, just as some bar associations are considering the

denial of membership to government lawyers, for such organizations should be based upon private practice, exclusively, with no taint of politics.

A. F. Durand,
(Not an M. D.)
—Chicago Daily News.

NOW SEEK TO SOCIALIZE LAW, SAYS BOAKE CARTER

Are the lawyers to be next on the list to feel the heavy hand of government competition?

Solicitor-General Bob Jackson claims that lawyers in general are charging too high fees for their services and that the Government may therefore be compelled to provide free legal service for people who cannot pay the fees of the private law firms.

"Low cost, high volume" legal service was his solution.

This piece of advice, coming from a lawyer representing a political organization whose high jinks have been so confusing as to provide more work for the legal fraternity than at any other time in the history of the American bar, borders on the comic.

A lawyer is justified in charging a fee which he believes commensurate with the worth of the services he renders, as is any artist, radio singer, movie actor, engineer, doctor, dentist or other professional man.

We have not yet reached the stage where we must submit to a system of socialized legal advice, as Mr. Jackson seems to envision as America's crying need, any more than we are prepared to accept socialized medicine. The relationship between client and lawyer is as intimate as the relationship between doctor and patient. And the very first person to turn thumbs down on the idea of government competition with the lawyers would be the average American citizen himself.

To be sure, some of the lawyers charge fees which seem outlandish. But their "outlandishness" can be measured only by the worth of the service rendered by the lawyer in the estimation of the client. A man accused of murder may feel he paid a cheap price in \$25,000 if the lawyer to whom he paid it convinced the jury his client was innocent. There are lawyers who specialize in certain departments of law.

Many of these establish a high standard of success before the bar. They are successful primarily because they are diligent and careful of detail. These characteristics are attainable only through long hours of hard work. For such "crimes" are they to be penalized?

Mr. Jackson was not known as anything extra-superspecial in the legal profession before he managed to climb aboard the New Deal bandwagon. By his avidity for politics and knowing whose political mug to kiss, rather than by his technological cunning as a lawyer, did Mr. Jackson rise to the position of Solicitor-General. Not in the widest stretch of imagination could Mr. Jackson hold a professional candle to the standards of sheer legal brilliance of the late Solicitor-General James M. Beck.

Where, then, does Mr. Jackson obtain the presumption blandly to inform some of the ablest legal brains of the Nation that they had better socialize their talents or else risk government competition in free advice? Simply that he is a politically appointed Solicitor-General gives him no excuse.

Furthermore, the boom in the law business during the last seven years is traceable to one source and one source alone—the New Deal, which Mr. Jackson represents. Most lawyers nowadays have to be mental trapeze artists to keep abreast of the twisted concoctions that have poured forth in a steady stream from the legal brains employed by the New Deal.

"The Government," says Mr. Jackson, "sees a large number of citizens who help pay taxes, deprived of legal service because they cannot pay the provisional scale of prices."

To begin with, a citizen cannot turn around nowadays, figuratively speaking, without being forced to go to a lawyer to find out whether he is or isn't unwittingly breaking some fool law, government ruling or regulation. In the second place, the lawyer whom he consults has a perpetual nightmare himself trying to keep up with the parade. The average citizen would not always be forced to run for legal advice these days, as indeed he must to keep out of a government jail, if the master minds in Washington quit thinking up new methods of regulating American economy from soup to nuts.

"It has been for centuries thought the duty of government to take affirmative steps to see that its citizens received justice," Jackson observed.

The first step to carry out that thought in a "representative" form of government (Jackson forgot to include that word "representative") is for the Government to abstain from competing with the endeavors of its citizens!

Mr. Jackson had better go back to Jamestown, N. Y., and private law. He might get back to earth again—on the other side of the fence!—San Francisco *Examiner*, July 17.

SCIENTIFIC SERVICE COMMITTEE

The Scientific Service Committee of the Illinois State Medical Society has endeavored for many years to give all possible assistance to county medical societies in selecting speakers to appear for talks on any subject in medicine which they desire to have presented.

In order to give better service the Committee has prepared a new classified listing of scientific subjects on which physicians are prepared to speak. These listings will be of material aid to county society secretaries in arranging programs in post graduate education.

The Committee will welcome requests for service from the secretaries and complete information may be had by writing to Miss Jean McArthur, Secretary, Educational Committee, Illinois State Medical Society, 30 North Michigan Avenue, Chicago.

POWER GIVEN TO ONE MAN, NOT ELECTED, TO WORK AS HE PRESCRIBES

Merle Thorpe, in *Nation's Business*, under the heading "BUREAUCRAT BECOMES DICTATOR" says:

Now comes a round-about official admission of a condition we have described in these columns during the past decade, a condition at once sapping the freedom of the individual citizen and destroying business enterprise, which is so sorely needed.

The admission comes from Senator Logan, of Kentucky, and Congressman Walter, of Pennsylvania—ironically enough, from men who helped by their votes to bring about the situation they now recognize and hope to alleviate, not by repeal, but by another layer of legislation.

The Logan-Walter bill is most significant. It proposes to give a citizen the opportunity to present his case to the courts, to have a trial by a jury of his peers. It offers a free man relief from the dictocrat (in a bureau, board or commission) who has deprived him of his freedom or his property.

The dictocrat is a natural development of the bureaucrat. The earlier bureaus of the federal Government did foolish and wasteful things. They "researched" and printed millions of pamphlets on "The Love Life of the Bull Frog," and "How to Pin Diapers on the Baby." But these were harmless extravagances: they were not invested with the power to legislate, to judge, and to deny judicial appeal. That development has come in the past ten years with terrifying rapidity, with more than 50 executive agencies, employing tens of thousands of men and women, now exercising the powers of autocracy. The bureaucrat has become dictocrat.

From a thousand examples of this alien practice, new to America, but very, very old in Europe, the case of Mr. Andrews, wage-hour executive agent of Congress, is typical. He announces that he has changed his mind and that employees receiving \$200 a month or more are no longer exempt from the Act. Here is a power given to one man, not elected, to compel citizens to work as he prescribes, to single out an individual or a group for punitive or favorable treatment. His whim or caprice may rule today, tomorrow he may be rewarding friends.

In this case there is not need of conjecture. Mr. Andrews slips in an admission that he is rewarding the labor union because "it has done such a swell job in helping me fight my battles."

A similar example of this departure from a government by written law and to a government by men is the Labor Department's instruction to federal employment agencies—public, tax-supported agencies—not to fill positions for those employers against whom there is a grievance pending, even though the grievance may be

outside his plant, such as a jurisdictional dispute.

No business today, from steel maker to peanut vendor, has written sailing orders.

The law of the land is found not on statute books, but in the brief cases of a hundred thousand dictocrats.

The Logan-Walter bill confesses the disease but, instead of a prescription to eliminate the causes, simply adds another layer of law, shamefully admitting that a citizen today in this erstwhile land of the free, must, by a new law, be given the protection of the courts. A doubtful protection, indeed, when it is recalled that court reviews, of the Wagner Labor Board's decisions have cost the citizen who appealed an average of \$26,000, and the sorry spectacle of re-enacting the trial by jury guarantee in the Bill of Rights.

Much can be said, and should be said, of the loss of personal freedom. But here we shall emphasize the point again, that one of the chief obstacles to a resumption of business enterprise is this new and un-American method of making the laws under which a business can carry on.

No matter how carefully a manager may sweat out an operating budget there is always a specter at his desk, the specter of a new rule that may wreck it completely. No skill, no vision can meet the additional risk of a ruling reversed overnight when a friendly group does "a swell job in fighting my battles."

COMMENT

As we have said and repeated frequently over two decades "*Bureaucracy Is Always a Curse and Where Medicine Is Involved It Is Fatal.*" Now we have Dictatorship plus *Bureaucracy*.

MORTALITY UP—BIRTHS DOWN IN ILLINOIS

A release from the department of public health says:

Due chiefly to a substantial increase in the number of fatalities attributed to heart disease, deaths in Illinois from all causes during the first half of 1939 stood at 45,932 against 42,966 in that period of 1938, an unfavorable difference of 2,966. The number of births was 55,614 and 51,233 for the first half of this and last year,

respectively, a decline of 1,619. Excess of births over deaths was only 9,682 in the first half of this year against 14,267, last.

Heart disease, to which was attributed 14,321 and 12,610 deaths in the first half of this year and last, respectively, an increase of 1,711, was by a wide margin the principal factor, responsible for the higher mortality this year. Limited largely to persons in the upper age brackets, the rising death rate from heart disease can be no surprise to any student of public health or demography. With the control over communicable diseases and other hazards of young life growing constantly more successful and with a declining birth rate, the average age of the general population has increased sharply, bringing with it an inevitable increase in the death rate. If prevailing birth and immigration rates continue, the general death rate will undoubtedly continue to rise until it reaches 15 or 16 per 1,000 population and the chief causes of death will continue to be the chronic ailments of later life, heart disease, cancer, nephritis, apoplexy, diabetes etc., all of which have followed an upward trend this year.

The maternal death rate declined noticeably, 3.2 against 3.4 per 1,000 births while the infant death rate remained unchanged, 42.5 per 1,000 births. Sharply higher mortality was attributed to influenza and whooping cough, due to unusual epidemic prevalence, and slightly higher rates to pneumonia and tuberculosis. Otherwise the trend in mortality from communicable diseases was downward.

INTERNATIONAL MEDICAL ASSEMBLY
INTERSTATE POSTGRADUATE MEDICAL
ASSOCIATION OF NORTH AMERICA

October 30, 31, November 1, 2, and 3, 1939

*Pre-assembly clinics October 28, post-assembly clinics,
November 4—Chicago Hospitals*

CHICAGO, ILLINOIS

Monday, October 30

8:00 A. M.

Diagnostic Clinic: "Nervous Indigestion." Dr. Walter C. Alvarez, Professor of Medicine, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Diagnostic Clinic: "Low Back Pain with Sciatica." Dr. Philip Lewin, Associate Professor of Orthopedic

Surgery, Northwestern University School of Medicine, Chicago, Illinois.

Diagnostic Clinic: "Clinical Types of Nephritis." Dr. Soma Weiss, Hersey Professor of the Theory and Practice of Physic, Harvard Medical School; Physician-in-Chief, Peter Bent Brigham Hospital, Boston, Massachusetts.

Intermission for Review of Exhibits.

Diagnostic Clinic: "Differential Diagnosis of Lesions of the Right Colon." Dr. Fred W. Rankin, Lexington, Kentucky.

Diagnostic Clinic: "An Evaluation of the Major Operations for Cavernous Pulmonary Tuberculosis." Dr. John Alexander Professor of Surgery, University of Michigan Medical School, Ann Arbor, Michigan.

NOON INTERMISSION

1:00 P. M.

Diagnostic Clinic: "The Use of the Bone Graft in the Treatment of Bone Tumors." Dr. Dallas B. Phemister, Professor of Surgery, University of Chicago School of Medicine, Chicago, Illinois.

Diagnostic Clinic: "The Treatment of Osteoarthritis." Dr. Russell L. Haden, Cleveland Clinic, Cleveland, Ohio.

Address: "Surgical Aspects of Peptic Ulcer." Dr. Eldridge L. Eliason, Professor of Surgery, University of Pennsylvania School of Medicine Philadelphia, Pennsylvania.

Address: "Symptoms and Diagnosis of Obscure Fever." Dr. James G. Carr, Professor of Medicine, Northwestern University School of Medicine, Chicago, Illinois.

Intermission for Review of Exhibits.

Address: "Surgical Treatment of Gallstones." Dr. Elliott C. Cutler, Moseley Professor of Surgery, Harvard Medical School, Boston, Massachusetts.

Address: "Medical Treatment of Liver Disease." Dr. Albert N. Snell, Professor of Medicine, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Address: "Infections of the Upper Urinary Tract." Dr. C. Donald Creevy, Assistant Dean and Associate Professor of Surgery and Urology, University of Minnesota Medical School, Minneapolis, Minnesota.

DINNER INTERMISSION

7:00 P. M.

Address: "Allergy as a Factor in General Medicine." Dr. James H. Black, Professor of Preventive Medicine, Baylor University College of Medicine, Dallas, Texas.

Address: "Management of Ileostomy and Colostomy." Dr. Richard B. Cattell, Lahey Clinic, Boston, Massachusetts.

Address: "Use of Hormones in Obstetrics." Dr. Frederick H. Falls, Professor of Obstetrics and Gynecology, University of Illinois College of Medicine, Chicago, Illinois.

Address: "Abdominal Pain in Extra-Abdominal Origin." Dr. John H. Musser, Professor of Medicine, Tulane University School of Medicine, New Orleans, Louisiana.

Address: "How Can High Mortality Rate from Skull Fractures Be Reduced?" Dr. Harry Mock, Associate Professor of Surgery, Northwestern University School of Medicine, Chicago, Illinois.

Address: "Treatment of Pellagra and Associated Deficiencies." Dr. Tom D. Spies, Associate Professor of Medicine, University of Cincinnati College of Medicine, Cincinnati, Ohio.

Tuesday, October 31

8:00 A. M.

Diagnostic Clinic: "Syphilis of the Vascular System." Dr. James E. Paullin, Professor of Clinical Medicine, Emory University School of Medicine, Atlanta, Georgia.

Diagnostic Clinic: "Fractures of the Femur Treated by Buck's Extension." Dr. William R. Cubbins, Professor of Bone and Joint Surgery, Loyola University School of Medicine, Chicago, Illinois.

Diagnostic Clinic: "Types of Edema and Their Treatment." Dr. Reginald Fitz, Wade Professor of Medicine, Boston University School of Medicine, Boston, Massachusetts.

Intermission for Review of Exhibits.

Diagnostic Clinic: "Treatment of Increased Intracranial Pressure." Dr. Eric Oldberg, Professor and Head of the Department of Neurology and Neurological Surgery, University of Illinois College of Medicine, Chicago, Illinois.

Diagnostic Clinic: "Management of Obesity." Dr. Robert W. Keeton, Professor of Medicine, University of Illinois School of Medicine, Chicago, Illinois.

NOON INTERMISSION

1:00 P. M.

Diagnostic Clinic: "Diagnosis and Treatment of Tumors of the Intestine." Dr. W. Wayne Babcock, Professor of Surgery and Clinical Surgery, Temple University School of Medicine, Philadelphia, Pennsylvania.

Diagnostic Clinic: "Diseases of the Lungs Simulating Tuberculosis." Dr. Charles R. Austrian, Associate Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Address: "Anomalies of the Lower Urinary Tract." Dr. Hugh H. Young, Professor of Urology, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Address: "The Physicians Interest in Gall-Bladder Disease." Dr. Alvah H. Gordon, Professor of Medi-

cine, McGill University Faculty of Medicine, Montreal, Canada.

Intermission for Review of Exhibits.

Address: "Indications for Cesarean Section." Dr. Nicholson J. Eastman, Professor of Obstetrics, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Address: "Rupture of Intervertebral Disks as a Cause of Low Back Pain and Chronic Recurring Sciatica." Dr. Alfred W. Adson, Professor of Neurosurgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Address: "Cerotherapy in the Treatment of Pneumonia." Dr. Gerald S. Shibley, Associate Clinical Professor of Medicine, Western Reserve University School of Medicine, Cleveland, Ohio.

DINNER INTERMISSION

7:00 P. M.

Address: "Exophthalmos" (The Joseph Schneider Foundation Presentation). Dr. Albert D. Ruedemann, Cleveland Clinic, Cleveland, Ohio.

Address: "Medical Treatment of Peptic Ulcer." Dr. Ralph C. Brown, Clinical Professor of Medicine, Rush Medical College, Chicago, Illinois.

Address: "The Management of Intestinal Obstruction." Dr. Thomas G. Orr, Professor of Surgery, University of Kansas School of Medicine, Kansas City, Missouri.

Address: "Migraine." Dr. Harold G. Wolff, Assistant Professor of Medicine, Cornell University Medical College, New York, New York.

Address: "Operability of Carcinoma of the Stomach." Dr. Verne C. Hunt, Clinical Professor of Surgery, University of Southern California School of Medicine, Los Angeles, California.

Address: "The Present Status of Transurethral Resection." Dr. Herman L. Kretschmer, Clinical Professor of Surgery (Genito-Urinary), Rush Medical College, Chicago, Illinois.

Wednesday, November 1

8:00 A. M.

Diagnostic Clinic: "Lesions of the Right Upper Quadrant of the Abdomen." Dr. William F. Rienhoff, Associate Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Diagnostic Clinic: "Rheumatic Fever in Children." Dr. Robert A. Black, Professor of Pediatrics, Loyola University School of Medicine, Chicago, Illinois.

Diagnostic Clinic: "Goitre and the Heart." Dr. Wallace M. Yater, Professor of Medicine and Director of the Department of Medicine, Georgetown University School of Medicine, Washington, D. C.

Intermission for Review of Exhibits

Diagnostic Clinic: "The Present Status of the Surgical Treatment of Peptic Ulcer." Dr. Howard K. Gray, Assistant Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Diagnostic Clinic: "Experiences with the Surgical Treatment of Hypertension." Dr. Loyal Davis, Professor of Surgery, Northwestern University School of Medicine, Chicago, Illinois.

NOON INTERMISSION

1:00 P. M.

Diagnostic Clinic: "The Management of the Various Types of Goitre." Dr. Frank H. Lahey, Lahey Clinic, Boston, Massachusetts.

Diagnostic Clinic: "The Insulins in the Treatment of Diabetes." Dr. Elliott P. Joslin, Clinical Professor of Medicine, Harvard Medical School, Boston, Massachusetts.

Address: "Treatment of Acute Spreading Peritonitis Following Ruptured Appendix." Dr. William D. Haggard, Professor of Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee.

Address: "Newer Approach to the Etiology and Treatment of Angina Pectoris." Dr. William J. Kerr, Professor of Medicine, University of California Medical School, San Francisco, California.

Address: "Carcinoma of the Lung." Dr. Evarts A. Graham, Professor of Surgery, Washington University School of Medicine, St. Louis, Missouri.

Address: "Dysmenorrhea." Dr. John R. Fraser, Professor of Obstetrics and Gynecology, McGill University Faculty of Medicine, Montreal, Canada.

Address: "The Hormones of the Gastro-Intestinal Tract." Dr. Andrew C. Ivy, Nathan Smith Davis, Professor of Physiology and Professor of Pharmacology, Northwestern University School of Medicine, Chicago, Illinois.

ASSEMBLY DINNER

For members of the profession, their ladies and friends.
Informal

7:00 P. M.

Dr. George W. Crile, President of the Inter-State Postgraduate Medical Association of North America—Master of Ceremonies.

Addresses by:

Major General James C. Magee, Surgeon-General, United States Army, Washington, D. C.

Dr. James B. Herrick, Professor Emeritus of Medicine, Rush Medical College, University of Chicago, Chicago, Illinois.

Major General Ross T. McIntire, Surgeon-General, United States Navy, Washington, D. C.

Dr. Chevalier Jackson, Honorary Professor of

Broncho-Esophagology, Temple University School of Medicine, Philadelphia, Pennsylvania. President-Elect Inter-State Postgraduate Medical Association of North America.

Dr. James H. Hutton, President, Illinois State Medical Society, Chicago, Illinois.

Dr. Nathan S. Davis III, Assistant Professor of Medicine, Northwestern University School of Medicine, Chicago, Illinois. President of Chicago Medical Society.

Thursday, November 2

8:00 A. M.

Diagnostic Clinic: "Malaria and Narcotic Addiction." Dr. Italo F. Volini, Professor of Medicine, Loyola University School of Medicine, Chicago, Illinois.

Diagnostic Clinic: "Joint Fractures." Dr. John J. Moorhead, Professor of Clinical Surgery, New York Postgraduate Medical School, New York, New York.

Diagnostic Clinic: "Modern Aspects of the Diagnosis and Management of Hypertension." Dr. Roy W. Scott, Professor of Clinical Medicine, Western Reserve University School of Medicine, Cleveland, Ohio.

Intermission for Review of Exhibits

Diagnostic Clinic: "Differential Diagnosis of Tumors of the Breast." Dr. John F. Erdmann, Attending Surgeon, New York Postgraduate Medical School, New York, New York.

Diagnostic Clinic: "Clinical Types of Pituitary Diseases." Dr. Walter Timme, Professor of Clinical Neurology, Columbia University College of Physicians and Surgeons, New York, New York.

NOON INTERMISSION

1:00 P. M.

Diagnostic Clinic: "A Presentation of Dermatological Cases." Dr. Francis E. Seneor, Professor of Dermatology, University of Illinois College of Medicine, Chicago, Illinois.

Diagnostic Clinic: "Diagnosis and Treatment of Diseases of the Cranial Nerves." Dr. Walter E. Dandy, Adjunct Professor of Neurological Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Address: "Chemotherapy in the Treatment of Pneumonia." Dr. Russell L. Cecil, Professor of Clinical Medicine, Cornell University Medical College, New York, New York.

Address: "Clinical and Biological Problems of the Irradiation of the Ovary." Professor Dott, Emanuele Momigliano, Department of Obstetrics and Gynecology, Royal University of Rome, Rome, Italy.

Intermission for Review of Exhibits

Address: "The Clinical Use of Digitalis." Dr. Drew W. Luten, Associate Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Missouri.

Address: "Interrelation of the Organs of Internal Secretion." Dr. Elmer L. Sevringhaus, Professor of Medicine, University of Wisconsin Medical School, Madison, Wisconsin.

Address: "Vascular and Abdominal Surgery." Dr. Charles H. Phifer, Professor of Surgery, University of Illinois School of Medicine, Chicago, Illinois.

DINNER INTERMISSION

7:00 P. M.

Address: "Prevention and Treatment of Virus Disease." Dr. Thomas M. Rivers, Rockefeller Institute for Medical Research, New York, New York.

Address: "Stricture of the Common and Hepatic Ducts." Dr. Waltman Walters, Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Address and Movie: "Transplantation of the Ureters into the Recto-Sigmoid and Cystectomy for Malignant Tumor of the Bladder." Dr. William E. Lower, Cleveland Clinic, Cleveland, Ohio.

Address: "Management of the Menopause." Dr. Emil Novak, Associate in Gynecology, Johns Hopkins University Medical School, Baltimore, Maryland.

Address and Movie: "The Distended Colon; Its Medical and Surgical Management." Dr. Claud F. Dixon, Associate Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Address and Movie: "Fifty Years of Eclampsia, Placenta Previa, and Cesarean Section." Dr. Joseph B. DeLee, Professor Emeritus of Obstetrics and Gynecology, University of Chicago School of Medicine, Chicago, Illinois.

Friday, November 3

8:00 A. M.

Diagnostic Clinic: "Diagnosis of Diseases of the Gall-Bladder." Dr. Warren W. Cole, Professor of Surgery, University of Illinois School of Medicine, Chicago, Illinois.

Diagnostic Clinic: "Diet and Nephritis." Dr. James S. McLester, Professor of Medicine, University of Alabama School of Medicine, Birmingham, Alabama.

Diagnostic Clinic: "Diagnostic Significance of Pain in the Abdomen." Dr. Irvin Abell, Clinical Professor of Surgery, University of Louisville School of Medicine, Louisville, Kentucky.

Intermission for Review of Exhibits.

Diagnostic Clinic: "Use of Iron, Liver Extract and Desiccated Stomach in the Treatment of Anemia." Dr. Cyrus C. Sturgis, Professor of Internal Medicine, University of Michigan School of Medicine, Ann Arbor, Michigan.

Diagnostic Clinic: "Is Early Hypertension a Curable Disease?" Dr. George W. Crile, Cleveland Clinic, Cleveland, Ohio.

NOON INTERMISSION

1:00 P. M.

Diagnostic Clinic: "Diagnostic Features of Chronic Appendicitis." Dr. George P. Muller, Professor of Surgery, Jefferson Medical College, Philadelphia, Pennsylvania.

Diagnostic Clinic: "Treatment of Peripheral Vascu-

lar Diseases." Dr. Alton Ochsner, Professor of Surgery, Tulane University of Louisiana School of Medicine, New Orleans, Louisiana.

Address: "The Management and Treatment of Scarlet Fever." Dr. John A. Toomey, Associate Professor of Pediatrics, Western Reserve University School of Medicine, Cleveland, Ohio.

Address: "Diagnosis of Diseases of the Thyroid Gland." Dr. Donald Guthrie, Associate Professor of Surgery, University of Pennsylvania Graduate School of Medicine, Sayre, Pennsylvania.

Address: "The Jaundiced Bleeder: Control of Hemorrhage with Special Reference to Vitamin K. Therapy." Dr. Harry P. Smith, Professor of Pathology, State University of Iowa, Iowa City, Iowa.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, January 6, 1940, at 2:00 p. m. The Board announces that it will hold only one Group B, Part I, examination this year prior to the final general examination (Part II), instead of two as in former years. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held in June, 1940.

Applications for admission to Group B, Part I, examinations must be on file in the Secretary's office not later than October 4, 1939.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 8, 9, 10, and 11, 1940, immediately prior to the annual meeting of the American Medical Association in New York City.

Applications for admission to Group A, Part II examinations must be on file in the Secretary's office not later than March 15, 1940.

After January 1, 1942, there will be only one classification of candidates, and all will be required to take the Part I examinations (written paper and case records) and the Part II examinations (pathological and oral.)

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

THIRD ANNUAL SYMPOSIUM

DEPARTMENT OF INDUSTRIAL MEDICINE
NORTHWESTERN UNIVERSITY MEDICAL SCHOOL

September 25 and 26, 1939

SCIENTIFIC SESSIONS

Monday Morning, September 25, 1939—9:00 A. M.
Chairman—Dr. Paul Starr, Assistant Professor of Medicine, Northwestern University Medical School
Non-Tuberculous Pulmonary Diseases

I. Clinical Aspects—Dr. Ernest E. Irons, Chairman

of the Department of Medicine, Rush Medical College.

II. Radiological Aspects—Dr. Hollis Potter, Chicago.

Discussion by—Dr. Robert C. Bloch, University of Chicago; Dr. Henry Sweany, Municipal Tuberculosis Sanitarium; Dr. E. B. Neff, Deere & Co.

Monday Afternoon, September 25, 1939—1:30 P. M.

Chairman—Dr. Wilbur E. Post, Clinical Professor of Medicine, Rush Medical College

Kidney Diseases of Mid Life

I. Clinical Aspects—Dr. Herman O. Mosenthal, Clinical Professor of Medicine, New York Post-Graduate Medical School of Columbia University.

II. Pathological Aspects—Dr. J. P. Simonds, Professor of Pathology, Northwestern University Medical School.

Discussion by—Dr. Edwin F. Hirsch, St. Luke's Hospital; Dr. Fred Fitz, Chicago Tribune; Dr. R. J. DeMotte, Pullman-Standard Car Mfg. Co.

Tuesday Morning, September 26, 1939—9:00 A. M.

Chairman—Dr. Edward Oliver, Associate Professor of Dermatology, Rush Medical College

Soap—A Cleanser and an Irritant and Its Role in Occupational Dermatitis

Dr. James Herbert Mitchell, Associate Professor of Dermatology, Rush Medical College.

Discussion by—Dr. L. F. Weber, University of Illinois Medical School; Dr. Cleveland White, Northwestern University Medical School; Dr. B. B. Reeve, Standard Oil Company; Dr. K. K. Jones, Northwestern University Medical School.

Welding—Gas and Electric

I. The Relative Importance of the Health Hazard—Dr. Eugene L. Walsh, Fellow in Medicine, Northwestern University Medical School.

II. The Protection of Operators—Dr. James A. Britton, Associate Professor of Medicine, Northwestern University Medical School.

Discussion by—Dr. Sanford Gifford, Northwestern University Medical School; Mr. Warren A. Cook, Zurich General Accident & Liability Ins. Co., Dr. H. A. Vonachen, Caterpillar Tractor Company.

Tuesday Afternoon—September 26, 1939—1:30 P. M.

Chairman—Dr. M. Herbert Barker, Assistant Professor of Medicine, Northwestern University Medical School

Common Beneficent Uses of Poisonous metals and Alkaloids—Economic Importance and Health Hazards

I. Lead and Lead Alloys in Industry—Dr. Marcus A. Grossmann, Director of Research, Carnegie Illinois Steel Corporation.

II. Control or Elimination of Health Hazards in Manufacture and Use of Ledloy—Dr. A. G. Kammer, Medical Director, Inland Steel Co.

III. Metallic Salts and Alkaloids in Agriculture.

IV. The Protection of the Health of the Grower, the Handler and the Consuming Public—Professor W.

A. Ruth, Department of Horticulture, University of Illinois.

Discussion by—Dr. Frank Queen, Passavant Hospital.

BANQUET SESSION

Blackstone Hotel, 7:00 P. M., September 26, 1939

Chairman—Dr. J. H. Chivers, Chairman, Board of Governors, Department of Industrial Medicine, Northwestern University Medical School

Toastmaster—Dr. Irving S. Cutter, Dean, Northwestern University Medical School

THE PAST AND FUTURE OF PREVENTIVE MEDICINE

Dr. Walter L. Bierring

Commissioner, Iowa State Department of Health, Des Moines, Iowa

OSTEOPATHY VETOED IN NEW YORK

On May 10 the governor of New York vetoed a bill which would have permitted licensed osteopaths to use instruments for minor surgical work, as well as use anesthetics, antiseptics, narcotics and biologic products. In a message explaining his action, the governor wrote:

To the Assembly:

There has been great misunderstanding with regard to this bill. Many people apparently believe that the practice of osteopathy as now carried on depends on my approval of the bill. This, of course, is completely contrary to the facts.

Any person now licensed or hereafter licensed as doctors of osteopathy are, regardless of my action on the bill, permitted to render exactly the same services as in the past. Their authority to carry on the functions now performed is in no way curtailed or abridged.

VALUE OF OSTEOPATHY CONCEDED

There is no question as to the substantial value and usefulness of osteopathy. This is generally conceded and recognized. This bill would, however, give all licensed osteopaths broad additional powers. It would permit all licensed osteopaths to use instruments for minor surgical procedures, to administer anesthetics and antiseptics, and to prescribe narcotics and biological products.

The additional authority now asked by the osteopaths may be far-reaching in its effect. A minor operation, if not properly performed, I am advised, may be more serious in its effect upon the patient than some of the so-called important operations.

The administering of drugs and biologicals where there is not sufficient training and experience with regard to their effect on the patients may lead to serious ill effects.

Undoubtedly many of the persons now licensed to practice osteopathy in this State have had broad training and experience in matters relating to medicine and surgery. On the other hand, many of the osteopaths practicing in this State were licensed prior to the

setting of the present high standards of training and have had little or no later experience in medicine or surgery.

LICENSING METHODS RECALLED

In addition, a very substantial number of the osteopaths now practicing in this State receive their licenses not through examinations within the State but by endorsement of licenses granted to them in other States. Some of them are graduates of osteopathic schools which are no longer recognized by our board.

In my opinion legislation should provide that applicants for licenses and those who already hold licenses as osteopaths but who now desire additional powers should be required to satisfy the Board of Regents either by submitted credentials or by examination that they have had the proper instruction and training in surgical procedure and drug therapy to justify the granting of the additional powers set forth in this bill.

In this way the Regents would be able to determine those who are actually qualified to use instruments for minor surgical procedures, to administer anesthetics and antiseptics and to prescribe narcotics and biological products. The difficulty of providing for such determination by the Board of Regents does not seem to me great.

The bill is disapproved.

CHRONIC STREPTOCOCCIC ULCER OF THE SKIN: UNRESPONSIVE TO LOCAL THERAPY BUT CURED BY SULFANILAMIDE: REPORT OF TWO CASES

The type of ulcer in the two cases that form the basis of M. H. Goodman's, Baltimore (Journal A. M. A., Oct. 15, 1938), report is apparently unique in that it was produced by streptococci, presented features of chronicity both clinically and histologically and occurred on the skin of healthy individuals. In each of the two cases there was introduced into the skin a variety of beta hemolytic streptococcus capable of producing low grade necrosis leading to chronic ulceration. The organism proved to be a *Streptococcus pyogenes* of human strain. In both cases the ulcers had enlarged with an irregular, firm, thickened, angrily red, ragged, undermined border and uneven deepening of a roughly granular glazed base, discharging continuously a copious serous fluid. Other than a slight and transient regional lymphadenitis, there were no complications. The biopsy studies revealed the presence of intracellular and extracellular cocci in pairs and short chains, and in various types of mediums inoculated with exudate from the ulcers a pure culture of the streptococcus was obtained. In case 1 it was totally impossible to effect healing by means of local antiseptic treatment. This was unquestionably due to the fact that the organisms, enclosed in a chronic fixed tissue cellular infiltrate in the region of the undermined portion of the ulcers, were beyond the reach of the agents applied. The sharp and prompt effect of sulfanilamide on the ulcer of the arm in this case not only solved the problem of therapy but

gave confirmatory evidence that the ulcers were of primary streptococcus (beta hemolytic) etiology. The ulcers of the leg in case 2 were each about four times the size of the large ulcer of the right forearm in case 1. The effect of sulfanilamide on these ulcers was as sharp and prompt as in case 1. Sterilization of the lesions took place as a result of the initial "course" of sulfanilamide, ranging from a total daily dosage of 60 grains to the gradually reduced dose of three 5 grain tablets a day. The slower healing in case 2 as compared to that in case 1 was obviously due to the larger size of the ulcers, their location on the lower extremities and the presence of numerous varicose veins.

RECENT STUDIES ON PATHOGENESIS OF WERLHOF'S DISEASE

Mario Torrioli and Vittorio Puddu, Rome, Italy (Journal A. M. A., Oct. 15, 1938), state that the results of researches on Werlhof's disease quite recently carried out in the laboratories of Johns Hopkins Hospital appear to be in perfect unison with the ones made by Torrioli and his associates. By means of intravenous injections of a spleen digested extract from a patient with Werlhof's disease, Troland and Lee repeatedly obtained a strong diminution of the platelets in the circulating blood of rabbits. Troland and Lee seem to arrive at the conclusion that the thrombopenic substance is specific of the splenic tissue in Werlhof's disease. On this point, however, the authors wish to make a reservation. In the first place it should not be forgotten that a decrease of platelets in circulating blood was obtained by Torrioli and Pusic with normal spleen extract. In the second place the controls used by the American authors were thyroid tissue, myomatous uterus which, like muscular tissue, has almost no effect at all on the thrombopoietic system, and finally a spleen from a patient with Banti's disease and from one with hemolytic disorder, both of which differ widely from normal spleen as regards structural and functional plan. It is to be hoped that experiments with extracts of normal spleen and other normal organs will be made on a larger scale in order to set on a perfectly clear basis the point regarding the specific character of this principle, a point which appears to them of the utmost importance for the next step toward the future solution of the problem.

ARE TAXES HIGH?

Speaking editorially the *Daughters of America Magazine* for July says: "Government expenditures per capita are as follows: United States, \$133; Great Britain, \$123; France, \$103. National expenditure for government is \$523 per family. Politicians blame high taxes on relief work, whereas only \$90 of the \$523 represents state and federal relief. If none were on relief each family would still be taxed \$433. With taxes in the United States the highest in the world, you have a fair indication of the present-day condition of American liberty."

Original Articles

ACUTE APPENDICITIS WITH PERFORATIVE PERITONITIS

KARL A. MEYER, M. D., PETER A. ROSI, M. D.,
ALFRED LUECK, M. D., and
MALCOLM TODD, M. D.

CHICAGO

Acute appendicitis without perforation today offers no great surgical problem. Removal of the appendicitis, barring the few catastrophies, infections and pneumonic complications, is associated with a very low mortality. At the Cook County Hospital during the period of 1928-1932 there were 1,857 patients with acute appendicitis without perforation, with a mortality of 1.1 per cent., whereas, during the period of 1937-1938 there were 1,585 patients with acute nonperforative appendicitis, with five deaths or a mortality of 0.39 per cent. Individual surgeons have still lower mortality figures in their own series. Immediate appendectomy in view of our present knowledge is the best treatment of acute nonperforative appendicitis.

Acute appendicitis complicated by perforation of the appendix with local or diffuse peritonitis remains a serious surgical problem. Every year in the registration area of the United States approximately 16,000 deaths are reported from acute appendicular peritonitis. Every year the medical literature contains many articles devoted to acute appendicitis and its complications. Black reviewed 37 such articles, which contained reports on 83,144 cases operated upon by 1,500 surgeons in 150 hospitals. The mortality rate for the entire series was 4.55 per cent. with variations of 0.036 per cent. to 11.40 per cent. The mortality for acute perforative appendicitis complicated by diffuse peritonitis varied from 11.25 per cent. to 33.00 per cent. or an average of 24.19 per cent. This series is sufficiently large to give a fairly accurate picture of the results obtained in the treatment of acute appendicitis and its complications.

Important problems in the treatment of acute perforative appendicitis are prophylaxis and early surgical consultation. The patient's neg-

lect in seeking medical advice for the early symptoms of acute appendicitis is probably the greatest contributing factor in allowing the appendix to perforate. Much needs to be done in educating the public regarding the classical symptoms of acute appendicitis and the seriousness of allowing the appendix to perforate. Self-medication, especially as pertaining to catharsis for indefinite abdominal distress continues to be an important factor in the mortality rate of perforative appendicitis. Cathartics are responsible not only for a greater incidence of perforations but to a more diffuse peritonitis. Upon the family physician falls the greatest responsibility of educating the public concerning these contributing factors. Upon druggists falls the responsibility of advising purchasers of cathartics to consult their family physician before trying purgation for abdominal pain.

Present day medical practice rarely is responsible for allowing the appendix to perforate. However, on account of the protean manifestation of acute appendicitis errors in diagnosis are not infrequent and occasionally an appendicular peritonitis occurs while the patient is under unsuspecting medical management. In view of the enormous differences in the mortality rate of acute appendicitis and of acute perforative appendicitis, exploration of the appendix of those patients in whom an acute appendicitis cannot be ruled out is justified.

Until the millennium is reached in which all the patients with acute appendicitis are operated upon before perforation occurs, the management of acute appendicular peritonitis shall continue to be one of surgery's greatest problems. In order to evaluate the various factors contributing to the mortality rate at the Cook County Hospital we reviewed 1,000 records of patients with acute perforative appendicitis during the period of 1928-1932 and subsequently reviewed the records of similar cases admitted in 1937 and 1938. As a basis for study we divided the patients into two groups: (1) acute perforative appendicitis with diffuse peritonitis, and, (2) acute perforative appendicitis with localizing peritonitis.

During the period of 1928 to 1932 there were 519 cases of acute appendicitis with perforation and diffuse peritonitis with 139 deaths or a mortality rate of 26.4 per cent. During the period of 1937 and 1938 there were 262 cases with 61 deaths, or a mortality rate of 23.3 per cent. These

From the Cook County Hospital, Chicago, Illinois.

Presented before Section on Surgery, 99th Annual Meeting, Illinois State Medical Society, Rockford, May 3, 1939.

mortality figures are higher than those reported by individual surgeons. However, in our series are included all cases admitted to the hospital. Some of the patients were moribund on admission, so that any treatment was futile. These figures, however, do give a picture of the diffuse

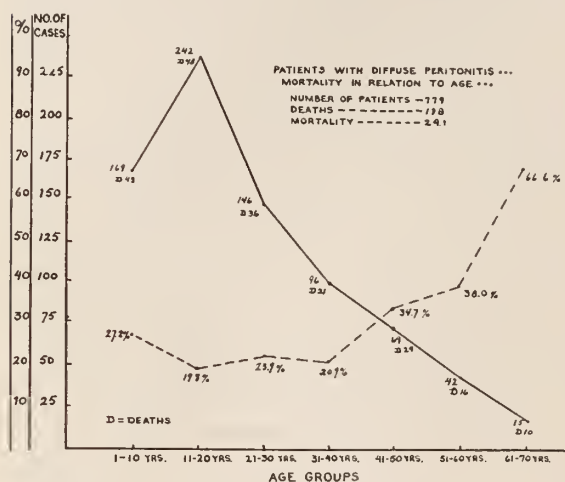


Fig. 1.

type of appendicular peritonitis seen in the indigent population. The mortality rate for the two periods was essentially the same. The 3.1 per cent. decrease in the death rate in the 1937-1938 period is probably statistically insignificant or might have been due to the more liberal use of blood transfusions made possible by our recently instituted blood bank and to the routine use of constant duodenal suction. The general principles of treatment were the same in both groups.

A review of the records of the two groups showed the relationship of age, duration of illness, type of operation and drainage of the peritoneal cavity to the mortality rate to be essentially the same so that the two series were considered together. The incidence of diffuse appendicular peritonitis and mortality rate in relation to age is shown in Fig. 1. The greatest number of patients, 242, or 31 per cent. of the total were between 11 and 20 years. There were 169 patients between one and ten years and 146 between 21 and 30 years.

In the remaining decades there was a proportionately decreasing incidence of diffuse peritonitis. The mortality rate in relation to age remained between 19.8 per cent. to 27.2 per cent. for the first four decades. There was a gradual rise in the fifth and sixth decades and an abrupt rise after 60 years of age. The slightly higher

mortality in children under ten years is probably due to the fact that at this age the omentum is proportionately less developed than in adults, so that perforation of the appendix tends to produce a greater amount of leakage and a more rapid diffusion of the peritoneal infection than in adults. The gradual rise after 40 years is due in some degree to the diminished resistance, consistent with advancing years. However, in this group of cases, there was a greater number of errors in the diagnosis of acute appendicitis or of the ensuing appendicular peritonitis. In these older patients the symptoms were more atypical than in the younger groups and were more frequently mistaken for an acute nonsurgical abdominal infection. Misapplied conservative management in many of these cases was a contributing factor to the rising mortality rate. The highest mortality rate occurred after 60 years. In our series the incidence of diagnostic errors and postoperative complications was the greatest in this period.

The relationship of the duration of the disease to the mortality rate is illustrated in Fig. 2. The majority of patients, 299 or 40.4 per cent. of the entire group were operated upon during the second day of the disease; 195 patients or 26.3 per cent. were operated upon during the third day and 105 or 14.2 per cent. during the first twenty-four hours. There were only 66 cases or 8.9

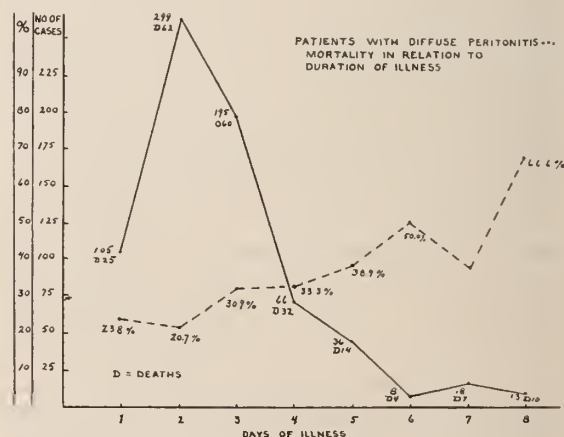


Fig. 2.

per cent. operated upon during the third day of the attack, the remaining patients were operated upon during the fifth to the eighth day of the disease. The mortality rate in relation to the duration of the disease remains fairly constant, 20.7 per cent. to 23.8 per cent., during the first

two days of the illness. After the second day the number of deaths gradually increases from 30.9 per cent. in the third day to 50 per cent. in the sixth and 66.6 per cent. in the eighth day. The rising mortality rate with the duration of the disease is consistent with the greater diffusion of the infections from a persistently leaking appendix. The peritoneal cavity may withstand the initial spilling from a perforated appendix but may be unable to withstand the continuous contamination for several days.

The relationship of the type of incision to the mortality rate is shown in Fig. 3. There were 426 patients who were operated upon through a McBurney incision with 82 deaths or a mortality rate of 19.2 per cent. Whereas, there were 180 cases operated upon through a right rectus incision with 42 deaths or a mortality rate of 23.3 per cent. There were 11 patients upon whom a mid-line incision was made with five deaths or a mortality rate of 45.4 per cent. From these figures one can assume a gradually increasing mortality as the incisions are placed more medially. The ideal incision for an appendectomy in patients with a diffuse peritonitis is an incision that allows the greatest exposure of the appendix with a minimum exposure of the remaining peritoneal cavity. In this way the appendix can be removed as a source of infection without disturbing the localizing processes already in progress. The McBurney incision fulfills these qualifications. The McBurney in-

There is less manipulation of bowel or packing off of intestine than in the more medial incisions. If the appendix is retrocecal the McBurney incision can be enlarged toward the lumbar region, thereby freely exposing the retrocecal space. With the cecum and ascending colon dis-

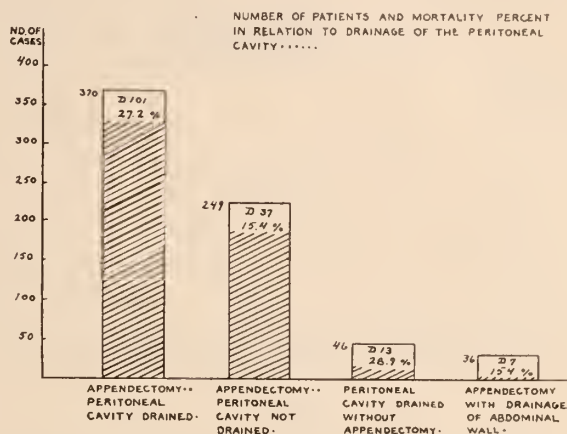


Fig. 4.

placed medially in these cases there is very little manipulation in the general peritoneal cavity. If the appendix lies medially or in the pelvis, the McBurney incision can be enlarged downward either by cutting across the internal oblique and transversalis muscles or cutting downward through the rectus fascia along the lateral border of the rectus muscle. Incisions placed more medially expose a greater extent of the peritoneal cavity and often interfere with the natural defensive mechanism that is attempting to wall off the perforated appendix. The mid-line incisions were made because of the errors in diagnosis.

Drainage of the peritoneal cavity continues to be a controversial procedure in the treatment of acute perforative appendicitis with diffuse peritonitis. As shown in Fig. 4 there were 370 patients upon whom an appendectomy was done and peritoneal cavity drained with 101 deaths or a mortality rate of 27.2 per cent. Whereas, there were 276 patients in whom appendectomy was done without drainage of the peritoneal cavity with 47 deaths or a 15.9 per cent. mortality. It would appear from these figures that drainage of the peritoneal cavity instead of decreasing the mortality rate actually increases the number of deaths. These group figures may not be a just evaluation of the problem since some surgeons established drainage in the more

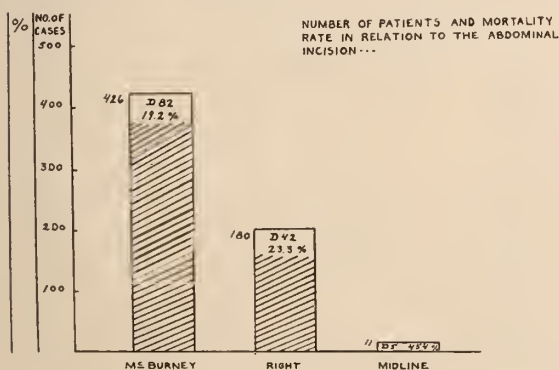


Fig. 3.

cision, especially if placed laterally near the anterior-superior spine of the ileum and with the middle of the incision over the maximum point of tenderness, has the advantage of entering the peritoneal cavity lateral to the cecum and usually directly over the leaking appendix.

severely ill patients whereas they failed to drain the peritoneal cavity of the patients in moderately good condition. However, one can conclude that drainage or non-drainage of the peritoneal cavity probably are no factors in determining the eventual outcome of a patient with diffuse

through the muscles. Many of these wounds became infected but the infection was less severe than wounds that were not cleansed. An alternative method is to leave the incision open after the operation, only closing the peritoneal cavity. The abdominal wound is allowed to heal by secondary intention.

The postoperative treatment that gave the best results was a modification of the Ochsner regime. Fluids were given by intravenous drip; nothing was given by mouth or rectally. Blood transfusions were given liberally and continuous duodenal suction was used routinely. After the peritoneal infection was controlled and peristalsis was reestablished fluids were given orally and later followed by more solid foods. No large enemas were given because of the danger of "blowing out" the appendiceal stump, although small oil or water enemas were given as desired.

The second group of patients studied were those patients who had a mass, which was found on routine examination, palpated under anesthesia or found after the abdomen was opened. The presence of a mass was considered as an indication that the inflammatory process was being localized. In those patients who were operated upon, a perforated appendix was found in the center of the mass. Around the perforation there was a variable amount of pus. Forming the wall of this abscess there was a zone of fibrinous exudate, adherent intestines and omentum which protected the general peritoneal cavity from the inflammatory process. For

peritonitis. Drainage of the peritoneal cavity as shown experimentally by Gage is impossible for more than eight to twelve hours, at which time the drain is surrounded by fibrinous exudate and bowel which wall it off from the general peritoneal cavity. Necropsy studies likewise show that drains which are inserted at operation are walled off from the general peritoneal cavity by omentum, fibrinous exudate and adherent intestine. Statistical studies fail to show any pronounced reduction in the mortality that can be attributed to drains. The patients live or die, not because of the number of drains in their peritoneal cavity or the absence of such drains, but because of the extent of the diffuse peritonitis and the type of surgery that is done.

Much more important than drainage of the peritoneal cavity is the care of the abdominal wound following an appendectomy for a diffuse appendicular peritonitis. Such wounds are invariably contaminated by the purulent peritoneal exudate. Most of these wounds become infected postoperatively. The infection usually causes only local sloughing from which the patient recovers with little morbidity or at most an incisional hernia. We have had, however, four deaths from abdominal wall infections following removal of a perforated appendix. Recently we have scrubbed these wounds with soap and water, as described by Jackson, cut away any grossly infected fat, and closed the wound primarily with a small soft rubber tissue drain down

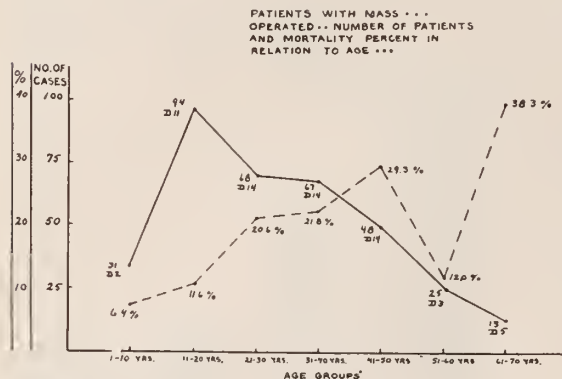


Fig. 5.

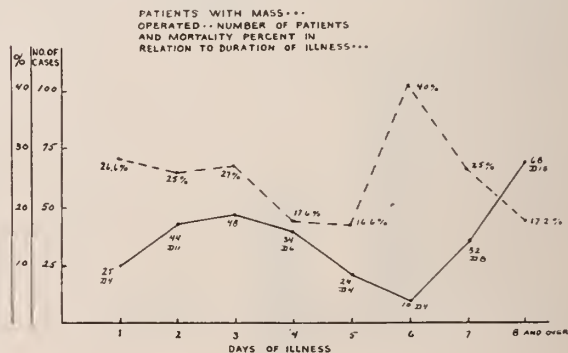


Fig. 6.

statistical study we divided the patients with a mass in two groups, (a) those patients who were operated upon, and (b) those patients who were treated by the Ochsner management. Like in the treatment of diffuse peritonitis, the results during the 1928-1932 period and the 1937-1938

period were practically the same so that they were tabulated together.

There were 346 patients with a periappendicular mass who were operated upon, with 63 deaths or a mortality of 18.0 per cent. The incidence and mortality rate in relation to age is shown in Fig. 5. The highest incidence was between 11 and 40 years, after which the number of patients gradually decreased. The death rate was lowest between one and ten years and gradually increased until it reached 38.3 per cent. in patients past 61 years. This increasing mortality with advancing years, which was also present in patients with diffuse appendicular peritonitis, is due to the gradually diminishing resistance and the increasing incidence of diagnostic errors in the aged.

The number of patients and mortality rate in relation to the duration of the illness is shown in Fig. 6. The number of patients was greatest in the second and third days of the illness. Unlike in diffuse peritonitis where the incidence was greatest during the second day, in patients with a mass the incidence was evenly distributed throughout the eight-day period. The number of deaths was likewise more evenly distributed and decreased with the duration of the illness, whereas in diffuse peritonitis the deaths proportionately increased with the duration of the infection. The mortality rate was higher in those cases operated upon in the first three days and subsequently gradually decreased. The 40

sis of patients with diffuse peritonitis in whom the mortality increased proportionately with the duration of the peritonitis.

In the group of patients with a periappendicular mass who were not operated upon there were 284 cases with 12 deaths or a mortality of 4.2

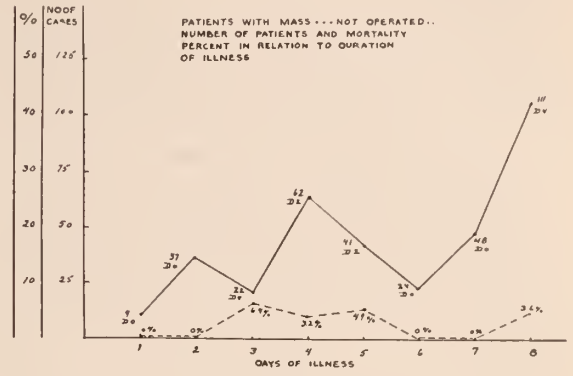


Fig. 8.

per cent. In Fig. 7 is illustrated the incidence and mortality rate according to age. The incidence curve has the same form as the curve of the patients with a mass who were operated upon. The number of patients is greatest between the age of 11 and 20 years. The mortality rate is very low in all age groups except in patients over 61 years, in whom the death rate rose abruptly to 25 per cent. However, after 61 years the number of patients is too small for statistical analysis.

Fig. 8 illustrates the number of patients and mortality per cent. in relation to the duration of the illness. The incidence is more or less evenly distributed over the recorded eight-day period. The mortality rate is low and evenly distributed throughout the entire period.

A review of the patients with a mass shows that the mortality is about four times as great in those patients operated upon (18 per cent.) as in the group not operated upon (4.2 per cent.). This mortality ratio was the same in the 1928-1932 and 1937-1938 groups.

During 1937-1938, however, there were proportionately more patients with a mass treated according to Ochsner's management than in the previous period. Because of this fact the mortality for the entire group of patients with a mass, operated and not operated upon combined, was lower. In 1928-1932 there were 481 patients with a mass with 59 deaths or a mortality of 12.2 per cent., whereas in 1937-1938 there were

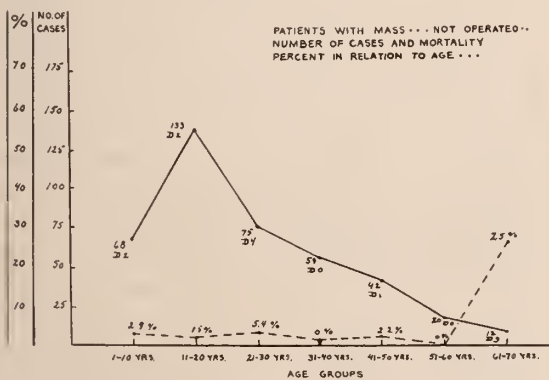


Fig. 7.

per cent. mortality in the sixth day is probably of no statistical importance on account of the small number of patients recorded. This decreasing mortality rate with the duration of the illness in patients with a periappendicular mass is directly the opposite result obtained in the analy-

249 patients with 16 deaths, or a mortality of 6.8 per cent., or a decrease in about 45.3 per cent. This reduced mortality rate for the group of patients with a mass was the only improvement in the treatment of the perforated appendix noted (1937-1938) over the previous period of 1928-1932.

Because of this reduced mortality and the reduction in the mortality of the nonperforative appendix from 1.1 per cent. in 1928-1932 to 0.3 per cent. in 1937-1938, the hospital mortality for all patients admitted with acute appendicitis was likewise lowered. During 1928-1932 there were 2,857 patients with 219 deaths, or a mortality rate of 7.6 per cent., during 1937-1938 there were 2,094 patients with 82 deaths or a mortality of 3.9 per cent., a 48.3 per cent., decrease.

SUMMARY

The two fundamental principles in treatment of acute perforative appendicitis are: (1) removal of appendix which nature has failed to "wall off" by a mass of fibrinous exudate, bowel and omentum from the general peritoneal cavity; and (2) assistance of the general reparative and immunological processes in those patients in whom there is evidence of localization or "walling off" of the peritonitis. The first would entail immediate appendectomy; the second delayed operation or the Ochsner treatment. The surgical therapy therefore depends upon the presence or absence of localization of the appendicular peritonitis. Many arbitrary rules, particularly in relation to the duration of the illness, have been established as guides to the most opportune time of operating upon these patients with appendicular peritonitis. But, since there are many variable factors following perforation of the appendix, rules often lead to meddlesome surgery or, not infrequently, to unnecessarily delayed surgery. There is no disease in which individualization of therapy is as important as in the treatment of diffuse appendicular peritonitis. There is also no disease in which the errors of commission are often as serious as the errors of omission. In the presence of definite evidence of localization such as a mass or gradually receding diffuse abdominal tenderness immediate surgery, as shown by the study of our figures increases the mortality rate. Since the appendix is being "walled off" from the peritoneal cavity the indications are to aid

the localizing and immunologic processes. Ochsner's management which consists essentially of starvation and constant duodenal suction so as to put the bowel at rest and the administration of parenteral fluids, is the most physiologic procedure to follow. Surgical intervention in these cases may break through the protective barriers and convert a localized peritonitis into a diffuse peritonitis, or into what Bowers most aptly calls "induced spreading peritonitis." In our series we have had 12 patients with a mass, who were unquestionably recovering from perforated appendix with a localized peritonitis, die from diffuse peritonitis after untimely surgery. We have likewise reviewed many records of patients who were convalescing satisfactorily from an appendiceal mass or localized peritonitis and who became gravely ill with signs of spreading peritonitis after thoughtless surgery. Fortunately, most of these patients had enough resistance to overcome the operatively-induced spreading peritonitis. It has been our practice to treat all patients with a mass or localizing peritonitis by Ochsner management. Most of the patients will recover completely on this management alone. In a small percentage of patients the mass will become larger, the temperature and leucocyte count will begin to rise. In these patients who fail to respond satisfactorily to the Ochsner treatment the mass usually reaches sufficient size so that it comes in contact with the parietal peritoneum of the anterior abdominal wall, or bulges in the right lumbar region in case of a retrocecal appendix or into the rectum. An incision over the most prominent portion of the abscess will allow adequate drainage. Since the incision is within the area of adhesion between parietal peritoneum and abscess wall there will be no soiling of the peritoneal cavity by the pus draining from the abscess. Not infrequently an abdomen is opened under the mistaken diagnosis of acute appendicitis without perforation and a mass is found in the appendiceal area. But the mass is not adherent to the parietal peritoneum or is far removed from the abdominal wound so that an incision into the abscess will allow pus to drain into the peritoneal cavity and induce a spreading peritonitis. In these patients the abdominal wound is closed without attempting to drain the appendiceal mass. The patient is placed on Ochsner's management. In the majority of the patients

the mass will disappear. In a few instances the mass will increase in size and can be drained after it bulges in the right lower quadrant.

An alternative method of managing this type of appendiceal mass is to close the original incision and make a second incision directly over the mass. The abscess that is adherent to the parietal peritoneum may then be drained without soiling the peritoneal cavity. A third method of dealing with this problem is that if the abscess wall is not adherent to the parietal peritoneum the mass may be surrounded by iodoform gauze inserted between the mass and the parietal peritoneum so as to stimulate plastic exudate and adhesions around the abscess and between it and the abdominal wall. Twenty-four hours following this procedure the abscess may be safely drained.

The management of acute diffuse appendicular peritonitis continues to remain a difficult problem. The fundamental principle involved is whether or not the patient is suffering from a constantly leaking appendix, from which both appendiceal and cecal contents are continuously spilled into the peritoneal cavity, or, whether the patient has a peritonitis from the initial spilling of the appendiceal contents, the appendix in the meantime having been "walled off" by fibrinous exudate and is no longer a focus of infection to the peritoneal cavity. The clinical determination of these underlying pathologic processes is difficult and often impossible. The presence of a diminishing area of abdominal tenderness and its localization to the right lower quadrant is a valuable sign in determining cessation of leakage from the appendix or at least a "walling off" of the process to the periaependicular area. The indication of treatment in these patients is to assist the localization and build up the general immunological processes. The conservative Ochsner management will give a lower mortality rate in these patients than surgical intervention.

In the absence of definite findings of localization expeditious removal of the appendix is the best plan to follow, since the appendix is probably still a source of infection to the diffuse peritonitis. Surgery in these gravely ill patients should be limited to the region of the appendix and should be done with a minimum of trauma or manipulation of the intestines. A laterally placed McBurney incision with the middle of the

incision over the point of greatest tenderness has given us the best results. It probably makes very little difference in the eventual mortality whether or not the peritoneal cavity is drained. Close observation during the postoperative period for signs and symptoms of complications and sequellae and the early treatment of these conditions will be helpful in reducing the mortality and make for a more uneventful convalescence. Meddlesome postoperative treatment that has no definite proven therapeutic effect should be avoided. Particularly dangerous are large enemas to combat abdominal distention. The danger of causing a "blow out" of the appendiceal stump far outweighs any good that can be obtained by giving enemas into a paralyzed bowel. Rigid adherence to the principle of starvation and constant duodenal suction so as to put the bowel at rest and intravenous administration of fluids, minerals and dextrose, will give the smoother postoperative course and lower mortality. A factor that has received too little attention in the past is the development of immunity to the organisms causing the diffuse peritonitis. Bower and his coworkers have shown a high titer to the antitoxin of the bacillus *Welchii* in a high percentage of patients recovering from appendicular peritonitis. He has likewise reduced the mortality rate from diffuse peritonitis by the administration of the Welch antiserum and convalescent serum. In view of the persistently high mortality with our present therapeutic procedures elucidation of the immunologic responses in patients with diffuse peritonitis may offer a new aid in the reduction of the mortality from acute perforative appendicitis.

DISCUSSION

Dr. Marshall Davison, Chicago: I think that Dr. Meyer is very modest in the presentation of his paper, particularly since he has used the editorial "we" and has never spoken in the first person. One might think the statistics he has presented are general, but in a period of 20 years of listening to Dr. Meyer as head of the Cook County Hospital we must realize that these statistics are the result of his teaching. For many years Dr. Meyer has had several points that he has brought before the interns; first, early operation for appendicitis, and second, the conservative management of patients who were seen late. I think those two points are the most important ones in the management of acute appendicitis. There is no point in discussing the management of an uncomplicated acute appendicitis. We are all agreed that it is a surgical lesion as soon as the diagnosis is made when that

diagnosis can be made early. The difficulties in management come from the complications of appendicitis, and not from the appendicitis alone. You have all heard the old saying that no one dies from appendicitis but that they die from the complications.

Dr. Meyer has very well divided these complications into the spreading type of periappendicitis, and the localized type of peri-appendicitis. If I may I would like to speak from the point of view of the appendiceal phlegmon and abscess. To be able to manage one of these cases intelligently the case must be seen for the first time late. We see many of these cases at the Cook County Hospital because most of them come under our management the second or third day. If we had seen them in the first twenty-four hours they would never have reached the stage of complications. I would say the majority come in with signs of localizing peritonitis, at which time we believe it is most dangerous to operate. Dr. Meyer has said the danger of producing peritonitis merely from the trauma of surgery is a factor that is not appreciated.

One might compare the formation of an appendiceal abscess to the formation of an ordinary boil. It goes through the stage of induration before the formation of a so-called head. We have all been taught since early days in pathology that the worst thing to do with a boil is to open it too early or squeeze it. We can say practically the same of an early appendiceal mass. These are not abscesses but are phlegmons comparable in that stage of development to the so-called boil. The mass may progressively enlarge for three, four, five or six days, and then much to our surprise in anywhere from 60 to 70 per cent. will subside spontaneously and completely disappear without any surgical intervention. Such masses in the early stage may have had small quantities of pus, but the resistance of the individual has been great and the pus is absorbed. Those that appear early and never reach the stage of suppuration are often continuously in the phlegmonous stage and will absorb much more rapidly than the larger masses which contain small amounts of pus. Dr. Meyer has spoken of the danger of opening these masses and has brought out the wisdom of closing the abdomen that is opened and found to contain one of such inflammatory masses, either with or without purulent exudate. Sixty or 70 per cent. of these masses will absorb without operative interference. Those that will require operative interference are those that have gone beyond the stage of induration and have developed into a well walled-off localized appendiceal abscess. Then surgical treatment is not undertaken with the idea of doing an appendectomy, but merely of draining a localized accumulation of pus within the abdomen.

I do not think there is a great deal of question but that every case of spreading appendicitis due to a leaking appendix should be operated upon early. I agree with Dr. Meyer that drainage does not make much difference in the ultimate mortality, because I do not believe it is possible to drain the entire abdominal cavity through a McBurney, right rectus or mid-line incision,

The most difficult time in appendicitis is in telling whether an abscess is going to localize; there are no symptoms or signs or anything in the history that will give information that the attack will subside and be treated as a localized appendiceal phlegmon. I really believe that probably the highest mortality in cases of appendicitis are in those which are treated conservatively but which should have been treated from the first with early appendectomy. Individuals in which pathological secretions localize following an appendiceal leak are fortunate. There are some in which localization begins at once. The first of the causes of localization is the anatomical position of the appendix; the retrocecal space is the most outstanding illustration. Second in the cause of localization is the presence of previously formed adhesions. We should say that the patient who has had previous attacks may develop a localized affair due to the resultant formation of adhesions. Third, thickness of the appendiceal wall; in this type the appendix will leak more slowly and this should presumably give nature more time to localize the process. Taking into consideration these three factors you will see that there is nothing by which we can tell at the onset of the attack whether they are present, or if present, whether they will work. Consequently we should not wait for localization in the early cases; we see localization under our eyes only at the time we see the patient for the first time late.

Dr. V. M. Seron, Joliet: I would like to ask Dr. Meyer two questions. First, in an acute ruptured appendix with beginning peritonitis, probably localized, which has been operated upon but the wound breaks open from pus drainage, how soon would he re-operate to close up at least the fascial and superficial layers, if not the peritoneum, where the bowel is pushing up into the wound.

Second, in a ruptured appendix with pus drainage what is the danger of intestinal obstruction after the wound has healed and adhesions have formed?

Dr. Frederick Christopher, Evanston: There is one point that Dr. Meyer did not mention which I think probably was not included in the subject matter of his talk; that it is good practice to advise everyone who has had an appendiceal abscess, who may have recovered spontaneously, to have a subsequent appendectomy.

Dr. A. D. Kirby, Champaign: How often in these cases of acute appendicitis do you find it necessary to do an enterostomy?

Dr. Karl Meyer, Chicago (closing): The secondary closure of an abdominal wound depends on the bacteriological examination. If there is still evidence of infection by culture, no secondary closure should be done. In answer to Dr. Christopher's question of when to operate following infection of the peritoneal cavity, it is our policy to wait for a period of at least two months. For a very large abscess, a longer time should ensue before the removal of the appendix is attempted. It is our policy to advise patients who have had a periappendiceal infection to have an appendectomy as only ten per cent. destroy themselves by infection or gangrene. Relative to the question of

enterostomy, it has been my belief and experience that it has only a very limited use in the treatment of paralytic ileus. The treatment of paralytic ileus is very important and demands very early care. The use of the Levine tube, adequate fluid balance, blood transfusions and medicinal agents for the stimulation of the intestinal musculature will be of great benefit to these patients. The question of mechanical ileus is a very important one and it occurs in a definite number of patients who are recovering from acute appendicitis. Here again it is of great importance to differentiate mechanical obstruction that demands reentering the abdominal cavity and one that is simply due to a paralytic ileus.

TUBERCULOUS ENTEROCOLITIS: DIAGNOSTIC DATA

LEO L. HARDT, M. D.,
MORRIS WEISSMAN, M. D.,
CARROLL E. COOK, M. D.,
and
CLEMENT L. MARTIN, M. D.

CHICAGO

Rarely is one called upon to diagnose primary tuberculous enterocolitis. This condition is today a rarity, because its former prolific source, i. e., milk from tuberculous cows, has been almost entirely eliminated. The secondary type of tuberculous enterocolitis, on the whole, offers few diagnostic difficulties, since it is, almost invariably, preceded by pulmonary tuberculosis, which at this stage is most likely to be advanced. Therefore the occurrence of any gastro-intestinal disorder should then lead to the suspicion of, and inquiry into, the possible presence of tuberculous enterocolitis.

While it is generally held that there are no symptoms conclusively diagnostic of tuberculous enteritis, yet the mode of their onset and development, their inevitable effect on the body economy, together with the physical findings, x-ray and laboratory examinations, render a diagnosis fairly certain. It is the summation of all the symptoms, physical signs and laboratory data, rather than any particular ones, that determines the diagnosis.

The various symptoms occurring in intestinal tuberculosis have been reported from time to time by many authors, among them Brown,¹ Engelsmann,² Lemon,^{3, 4, 5} and Logan.⁶ These

authors are very much in accord in their descriptions of the variable symptom-complex in intestinal tuberculosis. In the roentgen diagnosis of tuberculosis, however, there seems to be some difference of opinion as to the technique used and the interpretation of the findings. Due to the

VALUE OF CLINICAL SYMPTOMS IN DIAGNOSIS OF GASTRO-INTESTINAL TUBERCULOSIS

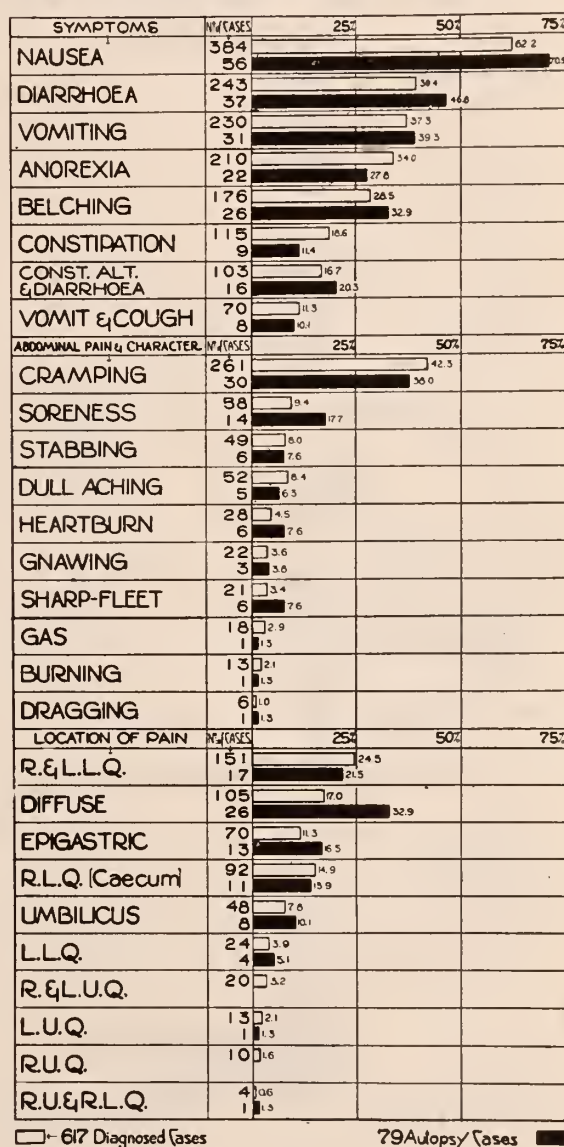


Chart 1.

physiology and anatomy of the intestinal tract, no roentgen method has yet been devised which will definitely visualize areas of ulceration. The interpretations are based largely on the physio-

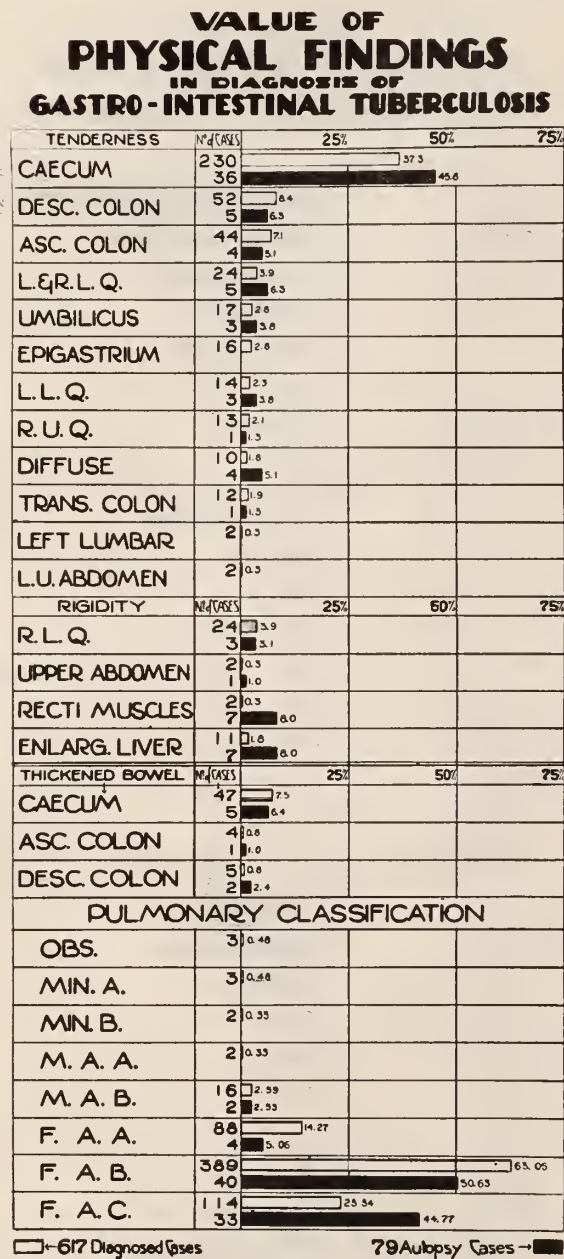
logical changes that take place in the intestinal tract.

Stierlin⁷ was among the first to recognize pathological changes in the lower end of the ileum, as well as indurating and ulcerative processes in the wall of the cecum and ascending

indurating, as well as ulcerative processes of the cecum and of the ascending colon manifest themselves regularly by an absence of the physiological shadow in this portion of the colon after five or six hours. For initial as well as advanced stages of the so-called cecal tuberculosis, the absence in the skiagram of the shadow of the cecum or of the cecum-ascending colon shadow is therefore typical. With the aid of radiography, the diagnosis can therefore be established even in cases in which it cannot be established clinically. Ulcers and infiltrations in the remaining portions of the colon can also be recognized in the skiagram by a shadow-defect which corresponds to the diseased section."

Brown and Sampson⁸ confirm Stierlin's work, and in their conclusions state: "The presence of a spasm or spastic filling defects, irregular contour, lack of haustration, failure of the cecum or other parts of the proximal colon to retain barium, generalized hypermotility with complete or almost complete emptying of the colon in twenty-four hours, of confirmed segmentation with the dilatation of some coils of the small bowel, ileac stasis and gastric retention are the essential points in the roentgen diagnosis when the intestine is studied at the seventh, eighth, ninth or tenth hours and again at the twenty-fourth hour. The barium enema usually confirms the fact that the ulcerated cecum or other portions of the colon may fail to receive or to retain the barium. And, conversely, the normal colon usually is represented by smooth, even haustrations without decided irregularities in outline. A normal enema, however, does not exclude the presence of intestinal tuberculosis, nor does contraction of the distal colon always indicate the presence of disease. The roentgen method of diagnosis reveals the presence only of intestinal ulceration, but, when associated with pulmonary tuberculosis, especially if the pulmonary disease is at all advanced, it is safe to make a diagnosis of intestinal tuberculosis."

Hammer⁹ by means of the barium enema studied the bodies of persons who had died of pulmonary tuberculosis. He removed the distal 20 cm. of the ileum and the proximal 25 cm. of the colon; filled it with contrast material, blew the excess out and inflated the intestine with air; made x-ray pictures of it; and then opened it and compared the preparation with the x-ray picture. He examined 11 bodies. In two cases



there was swelling and infiltration of Peyer's patches with central caseation, but no ulceration; in six cases there was more or less ulceration of the mucosa; in one case there was ulcerative polyposis with productive intestinal tuberculosis; in one case there was ulceration and cicatricial contraction; and in one case there was dysenteriform intestinal tuberculosis. In one of the cases with ulceration there were numerous lenticular ulcers with undermined edges, which did not show in the roentgen picture. Most of the lesions were shown by the contrast fluid; swollen Peyer's patches, which extended over the surface, but were not ulcerated, are, in general, not demonstrable, ulcers are generally recognizable, and when the intestine was inflated with air, marginal ulcers are recognizable in the slightly jagged and wavy contour. Contracted ulcers and scars are generally not recognizable, and lenticular ulcers with undermined edges were not recognizable. Ulcerative polyposis (productive) and dysenteriform tuberculosis appear the same in x-ray pictures as do the pure ulcerative form; the difference is only relative. Changes in the lumen are easily recognizable; and thickenings of the wall are well seen in the x-ray picture. On the basis of these postmortem studies, an attempt was made to demonstrate similar anatomical changes in the living person. For this purpose barium enemas were given when possible and then the bowel was inflated with air. The author studied 34 patients with clinical intestinal tuberculosis. In seven of these cases it was not possible to use any enemas, but in two of these the fine zigzag contour had been demonstrated. In the remaining 27 cases, enemas and inflation with air showed the fine zigzag contour; and six of these cases came to necropsy, and ulcerative intestinal tuberculosis was found in all six.

The laboratory data (other than x-ray) helped but little in the diagnosis of intestinal tuberculosis. Blood and urine examinations proved of no consequence. In our series the stools have been studied for blood, pus, undigested food and amoeba. (Chart I.) Occult blood was frequent. The tendencies to gross hemorrhages from the intestinal tract are few. Fatal cases have been reported. Cruice¹⁰ has collected 26 cases of large hemorrhages and added four fatal cases. Engelsmann¹¹ reported two fatal cases. Pus occurs only in small quantities. Undigested food is common

in the cases suffering from diarrhea. The presence of tubercle bacilli in the stools is of no diagnostic value in view of the fact that in most of these patients the tubercle bacilli can be recovered from the stool because of swallowed sputum.

Pathological studies of intestinal tuberculosis date back to Louis¹² in 1825. Since that time many pathological studies have appeared in the literature. From these pathological reports the incidence of intestinal tuberculosis as a complication in pulmonary tuberculosis varies from about 50% to 85%.

Crawford and Sawyer¹³ in a survey of 1,400 autopsies at Fitzsimons General Hospital in Denver, Colo., covering a period of 13 years, report 66.8% tuberculous lesions in the intestinal tract.

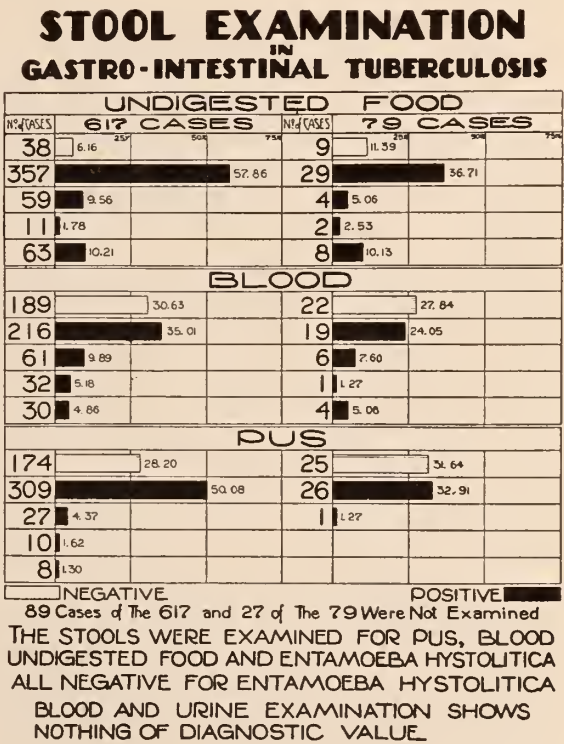


Chart 3.

Goldberg, Sweany, and Brown¹⁴ in 1928, in their pathological studies of enteritis, find ulcerative enteritis in 184 out of 230 autopsies (80%). In their report they also observed 4.3% of this group had peptic ulcer; 20% present submucous gastric hemorrhage; and about an equal number of them showed atrophic gastric glands with atony of the musculature, thinning of the mucosa and flattening of the rugae. In

other words, approximately 44.3% of the 230 autopsies suggested gastritis or peptic ulcer.

In general, tuberculous lesions are commonly found from the mid-ileum to the transverse colon. Tuberculous lesions in the stomach and duodenum are rare, the most common sites being in the lower ileum, cecum and transverse colon. The most common site of the incipient lesions is in one of three places: (a) the lymphoid tissue of the ileum above ileocecal valve; (b) in the cecum at a point where the food current meets the mucosa; (c) the ileal margin of the ileocecal valve.

In our series of 617 cases we have studied in detail during the past six years, 79 of these have come to autopsy. In this paper we wish to compare the diagnostic data in the entire group with the autopsy group.

SYMPTOMS—(CHART 2)

The duration of the gastro-intestinal symptoms in the entire group ranged from three days to 17 years, the average being 14 months. In the postmortem group the duration of the symptoms ranged from eight days to 56 months, the average being 20 months.

Anorexia. The patient usually first notices either an abrupt or a gradual loss of appetite. Oftentimes he complains of an easily satiated appetite which he describes as very "keen" before eating. Frequently associated with anorexia is a sense of gastric fullness. This bloating is very often felt immediately after, or even during, meals. On the other hand, the bloating may recur at certain times of the day, notably in the evening. This symptom we consider of great importance, especially if it happens to occur in a patient who is pulmonally on the mend or even if only stationary. It is quite likely, as already pointed out by others, that the surprise instances of extensive tuberculous bowel ulceration found on postmortem, having been unsuspected during life, would be fewer if more attention were paid to the above described anorexia with the frequent concomitant bloating and resort be had to a more thorough history and physical examination.

Vomiting. Vomiting, if present, is seldom of the distressing type. Its interpretation is, however, at times difficult, since it may appear as an emetic cough; if unaccompanied or uninitiated by cough, even if not frequent, it should arouse suspicion. Repeated copious vomiting immediately or some time after meals and persisting

over a long period is probably not of intestinal origin. Thus in one of our cases, it was associated with pain in the epigastrium and ileocecal region. The vomiting persisted with varying degrees of severity for a period of six months. The patient was put on tuberculous enteritis management, which rapidly proved quite effective. Two years later the patient died during a frank pulmonary hemorrhage. On postmortem perihepatitis and perisplenitis were found, but no intestinal involvement. Spells of intermittent vomiting with or without nausea should always be looked upon as of serious prognostic significance. Nausea with or without vomiting may persist at an irregular time of the day, most frequently in the morning.

Pain. Pain as a symptom in specific enterocolitis is of great significance for it is most constant. It is seldom very severe and may occur early in the disease. In fact, it is very often only a tenderness elicited on palpation or motion rather than an actual pain. The location of the pain while frequently found to be in the ileocecal region, in some cases it quite often is—at least initially throughout the entire course of the colon, the midepigastric region or the lower left quadrant of the abdomen. It is obvious that even in the unusual instances the ileocecal region, the classic site of tuberculous involvement, may eventually become the seat of pain. Frequent cramp-like, general abdominal pain may occur, especially during a diarrhea siege, but seldom is it continuous or even prolonged.

If at the onset the midepigastrium chances to be the location of the distress, it occasionally simulates peptic ulcer or cholecystitis. However, bearing in mind the time relation of the pain, the food intake, the rhythmic occurrence of remissions, the usual absence of associated anorexia, the character of the pain being more than mere tenderness—while in tuberculous enterocolitic the pain may occur during eating or immediately after eating—again it may be relieved by bowel movement, and at times it is severe either before or after a bowel movement. Then the greater frequency of intestinal tuberculosis in the pulmonally tuberculous should be borne in mind. On the other hand, the oversight of a peptic ulcer in the tuberculous is not to be condoned. Hence repeated x-ray examinations should be had in doubtful cases.

Cholecystitis is another prolific source of diag-

nostic confusion when the pain is epigastrically located. As a matter of fact, it may even coexist. However, in the average early case the absence of a history of periodic attacks, the absence of rigidity and pain in the right hypochondrium, a negative Graham test suffice to differentiate the two conditions. Parenthetically it may be added that in the late cases the rigidity of the ileocecal region usually propagates itself to the right hypochondrium. But in these cases the existence of intestinal tuberculosis is not questioned.

The ileocecal site of pain is not devoid of diagnostic difficulties, especially when the onset is acute. In that case it is impossible to differentiate from ordinary acute appendicitis, since it invariably presents the initial generalized and the subsequent localized abdominal pain syndrome. Moreover, it almost always presents a high leucocytosis and an augmented polymorphonucleosis. The fever curve is nearly always identical with that met with in the nonspecific appendicitis attack.

Except in exacerbations of well established intestinal tuberculosis we always advise operation. At one time Smithies, et al¹⁵ cherished the hope that in case it should prove cecal tuberculosis, extirpation of the area carrying the brunt of the disease, allowing of course for a solitary tubercle here and there to remain behind, would eventually result in a cure. They found in early subacute or chronic cases where operation was done that the physical findings were no criterion of the actual extent of the involvement. Not only the cecum but also the ascending colon and even the terminal ileum were found studded with nodules so as to require an altogether too formidable bowel resection.

Summary of Pain. In general, the pain may be acute, stabbing, boring, or cramp-like in character, or again may be only a slight soreness or dull aching. The pain is most frequently localized in the right and left lower quadrant of the abdomen or somewhere along the course of the large bowel. Again it may be diffused over the entire abdomen or localized to the epigastric region or entire upper abdomen. The pain usually is made worse by eating and is usually relieved following a bowel movement or vomiting. Cold drinks and cold foods may initiate a pain or increase the intensity thereof.

Diarrhea. Diarrhea may be a very early or a very late symptom; may be persistent, intermit-

tent or alternating with constipation; may be painful one time or painless at another time. Its outstanding features are that it is always exhausting as it occurs and emaciating in the course of time if not counteracted by treatment. An untreated, frequent or prolonged diarrhea that does not prove exhausting and emaciating is, most likely, of nonspecific origin. The frequency of the stools may vary from one to twenty. The average case suffering from diarrhea would complain of from five to six bowel movements daily during the attack of diarrhea. These attacks may last from one day to several weeks. The patient suffering from diarrhea rarely complains of copious pus or blood in the stools. A sense of incomplete evacuation is commonly complained of during the period of loose bowel movements and may prove, at times, very troublesome.

Intestinal Hemorrhage. Intestinal hemorrhage as a result of intestinal tuberculosis is rare in our series. In the small percentage of cases where gross bleeding occurred, it was found to be due to focal rectal conditions such as hemorrhoids, fissures and thrombosed veins, carcinoma or nontuberculous ulcerative colitis. A history of gross bleeding interpreted as being due to intestinal tuberculosis occurred in only two cases in our series.

Constipation. Constipation varied from a mild form, relieved by small amounts of mineral oil, to a severe constipation without bowel movement for two or three days. Attacks of severe constipation may be followed by spells of diarrhea or again may persist throughout the entire course of the disease.

Gastric Symptoms. In a careful study of the pathological reports, one is inclined to believe that various types of gastritis are present more frequently than is clinically elicited. An accurate knowledge of the gastric involvement can only be obtained by the use of the gastroscope, and this we hope to add to our diagnostic equipment in the near future. The many gastric symptoms, such as bloating, fullness, belching, sour stomach, heart burn, acid eructation, distress simulating peptic ulcer, slight gastric hemorrhages, in the absence of x-ray findings, all point to a frequent occurrence of a probable gastritis. An early study of the gastric mucosa by means of the gastroscope in the patient suffering from a pulmonary tuberculosis may glean some very interesting facts.

PHYSICAL FINDINGS—(CHART 3)

With few exceptions the cases under observation were all suffering from far advanced pulmonary tuberculosis. The average age of the entire group of the males was 31 years and the females 27 years and six months. In the post-mortem group the average age of the males was 27 years and nine months, and the females 24 years and nine months.

Loss of weight or failure to gain under proper treatment occurring in a patient in whom we can discover no extension of the original pulmonary lesion, may herald the onset of intestinal tuberculosis, provided, of course, we ruled out the various conditions such as focal infections, hyperthyroidism, diabetes, malignancy, an activated latent heart lesion or tuberculous kidney. In our entire series, 408 give a history of weight loss (66.13%), ranging from one to 80 lbs., the average weight loss being ten lbs.; 93 gained weight (13.07%), ranging from $\frac{3}{4}$ to 41 lbs., the average being $9\frac{1}{4}$ lbs.; 32 remained stationary (5.18%); 84 (13.62%) were incomplete. In the postmortem group 48 (60.76%) showed a weight loss ranging from three lbs. to 50 lbs., an average of $18\frac{3}{4}$ lbs.; seven (8.86%) gained weight, ranging from one to 11 lbs., an average of $3\frac{1}{2}$ lbs.; two (2.53%) remained stationary; and 22 (27.85%) no record, weights probably not taken because of the condition of the patient.

Pallor is also very suggestive. It does not, as a rule, mean a true anemia. Pulmonary tuberculosis alone seldom presents that yellow grayish shallowness met with in the untreated, advanced intestinal tuberculosis.

Ascites we found rather uncommon in our cases. When it did occur, the presence of intestinal involvement had already been established. On the other hand, the origin of the ascites itself was sometimes in doubt. For our purpose we have made it a rule to regard in the intestinally tuberculous a slow oncoming, moderate ascites showing a tendency to resorption under treatment as of tuberculous origin; a rapidly forming, copious ascites requiring frequent tapping with no tendency to resorption is either entirely of non-specific origin—i. e., cardiac, renal, or hepatic, conjoint as a superimposed factor.

Of the physical signs the most useful is that of rigidity in the ileocecal region. It is usually not of the board-like type. The right lower

quadrant and very often the entire right rectus presents a "leathery" feel or a sheer boggy. The ileocecal region reveals a fullness that renders it asymmetrical with the gentle slope in the contralateral region. On palpation, one frequently meets with an ill-defined, irregular, yielding, moderately tender and at times ballooned mass.

The scaphoid abdomen is met with usually in the very late cases where the diagnosis is seldom in doubt. In such cases we found the localized rigidity nearly always absent. The abdominal muscles have a "granular" feel. The skin appears "stretched" and feels like tissue paper.

The anal sphincter is very often unusually rigid, frequently because of associated fissure, fistula or ulceration immediately above or in the vicinity.

Aiming to distinguish between tuberculous diarrheas and those of amebic dysentery and ulcerative colitis, we, in every case, on the initial examination order feces and proctoscopic examinations. The former establishes the presence or absence of amebiasis. The mere presence of tubercle bacilli in the feces is not conclusive since it may come from swallowed sputum.

Proctoscopic Examinations. In cases in which low colon ulceration is due to tuberculosis, the usual proctoscopic appearance is fairly characteristic. The ulcers are moderately large; they vary from a few millimeters to several centimeters. Their outline is irregular and the edge is usually reddened, thickened and slightly raised and often undermined a distance of a few millimeters; the undercutting may be extensive. Commonly, the ulcer base is covered with a yellow pyogenic membrane which is only slightly adherent and on its being swabbed away, tuberculous granulation tissue is revealed. The granulations bleed easily but, when dry, appear finely nodular or pebbled. Typical lesions can usually be diagnosed tuberculous from their proctoscopic appearance alone; the atypical forms present difficulty.

Not all tuberculous ulcers exhibit all the characteristics just mentioned; healing ulcers, their bases covered with a clean gray membrane, may be interspersed with the active lesions in all stages of progress. The mucosa between the ulcers may be edematous, often reddened and at times dry and atrophic. It is generally normal except for vascular changes. Moderate diffuse redness is common; in some instances areas paler

than normal are interspersed with areas redder than normal. This phenomenon gives a diffusely mottled appearance to the bowel wall. The engorged mucosa itself does not bleed when it is swabbed with a cotton-tipped applicator but the fine venules in it may, with a resultant line of oozing marking the vessel's course. In arrangement these vessels form branching (tree-like) or parallelogram (diamond-shaped) patterns in the mucosa. While at times such may be visible with any type of acute or subacute colitis, they are fairly constant in tuberculous colitis. They are not visible in all cases.

In the tuberculous lesions, loss of mobility of the portion of bowel visualized by the proctoscope is not common. Mucosal ring stricture may occur at the site of a healed or healing ulcer but tubular stricture is rare. Diffuse contraction of the ampulla and diminution in the size of the rectal valves is rarely seen, unlike the process in chronic ulcerative colitis.

The roentgen studies were done almost exclusively by means of barium enema. The enema used was a mixture of barium-kaolin. This mixture was resorted to in order to minimize the bowel irritation. In many instances after the first bowel evacuation following the administration of the barium mixture, the bowel was inflated with air. With few exceptions, using this method, the patients suffering from tuberculosis rarely complained of discomfort while the colon is filled and do not object to the periods of delay between observations. Mass movement is very seldom seen even in the well advanced tuberculous enterocolitis.

The zigzag, or "mouse nibble," contour denoting tuberculous ulcers, as described by Hammer,¹⁶ were also observed by us, as was also the irritability of the bowel and the failure of the cecum and other proximal parts of the colon to fill and retain barium. Many of the patients observed had residue-filled loops, probably as a result of an established cathartic habit. It is our experience that only too often a bowel which is considered normal, as visualized by the barium enema method, does not exclude the presence of tuberculous enterocolitis.

No serious attempt was made in our study to separate our cases into enterogenous and hemotogenous groups. The fact is that these groups are not sharply defined. The same case may at one time or another belong to either or both. In

the late generalization of the chronic localized case the intestinal involvement may assume an hemotogenous aspect akin to the lesions in the other organs sharing in the widespread invasion.

The temperature curve, if high and continuous and if not accountable by either an increase in the pulmonary or distant-organ involvement, may conceivably point to a hemotogenous origin in an existing intestinal involvement. However, postmortem material does not confirm this view.

Rather than the above alluded to systemic reaction, one is inclined to regard the local manifestations as the more decisive. Thus, given a diffuse, non-localizing pain over the entire colon accompanied by the usual other symptoms, i. e., diarrhea, loss of weight, etc., plus a rapid course, one would be inclined to regard the process of hemotogenous origin. Even then, it is, perhaps, highly questionable.

Of the entire series, representing 617 cases that were considered positive for intestinal tuberculosis either by x-ray or clinical observation, or as found at postmortem, 543 that were considered clinically positive were diagnosed positive by x-ray in 404 instances (74.4%); negative in 139 instances (25.6%). The proctoscopic examination was positive in 29 of 481 cases (6.02%).

Of the 79 postmortem cases, only 60 had a complete examination, including x-ray diagnosis. Of the 60, 50 had tuberculous involvement of some portion of the gastro-intestinal tract (83.33%). The clinical diagnosis was correct in 48 cases (80%). The x-ray was correct in 38 (63.33%). The proctoscopic examination was positive in three cases (5%). In the 79 postmortem cases the clinical diagnosis was correct in 62 instances (78.6%). A careful analysis of the 17 cases that were considered incorrect revealed that nine had pronounced tuberculous changes in the liver and spleen. The symptoms in this group closely paralleled those in which ulcerative lesions of the intestinal tract were found. The tendency to more prolonged vomiting seemed evident in this group—perhaps a point of differentiation.

SUMMARY

(1) There is no specific procedure as yet available in the accurate diagnosis of intestinal tuberculosis. The clinical observations are still the most dependable method for the detection of intestinal tuberculosis. In our series the clinical diagnosis proved correct in 80%.

(2) The roentgen studies by the barium enema method proved of value in 63.33%.

(3) The protoscopic examination was a direct aid in 5% of the cases that came to postmortem and 6.02% in the entire series of 617 cases.

(4) The stool examinations helped to exclude nontuberculous enteritis and amoebiasis. The examinations of the blood and urine were of no help.

30 North Michigan Avenue.

BIBLIOGRAPHY

1. Brown; Lawrason, and Sampson, H. L.: *Intestinal Tuberculosis*, 154-204, Phila., Lea & Febiger, 1930.
2. Engelsmann, R.: Ueber die sekundäre Darmtuberkulose, *Beitr. z. klin. d. Tuherk.* 38: 16, 1917.
- 3, 4, 5. Lemon, W. S.: The Status of Present-day Methods of Examination in the Diagnosis of Intestinal Tuberculosis, *Minnesota Med.*, 6: 300, 1923. Tuberculosis Enterocolitis, *Minnesota Med.*, 6: 572, 1923. Intestinal Tuberculosis: III. Clinical Studies Relating to Diagnosis, *Trans. Nat. Tuberc. Assn.* 21: 186, 1925.
6. Logan, A. H.: Chronic Ulcerative Colitis; a Review of One Hundred and Seventeen Cases, *Northwest Med.* 18: 1, 1919.
7. Stierlin, Eduard Die Radiographie in der Diagnostik der Ileozoekaltuberkulose und anderer Krankheiten des Dickdarms, *Munchen. med. Wchnschr.* 58: 1231, 1911.
8. Brown; Lawrason, and Sampson, H. L.: Diagnosis and Treatment of Tuberculosis of Small and Large Intestine, *J. A. M. A.* 98: 26, 1932.
9. Hammer, G.: Die Roentgendiagnose der Darmtuberkulose mit Untersuchungen über die Funktion Valvula Bauhini, *Deutsch. med. Wchnschr.* 54: 57, 1928.
10. Cruice, J. M.: Intestinal Hemorrhage in the Tuberculosis, *Med. Rec.* 84: 471, 1913.
11. Engelsmann, R.: Ueber die sekundäre Darmtuberkulose, *Beitr. z. klin. Tuberk.* 38: 16, 1917.
12. Louis, P. C. A.: *Recherches anatomico-pathologiques sur la phthisie*, Paris, Gabon, 1825; *Recherches anatomiques, pathologiques et therapeutiques sur la phthisie*, 2. ed., Paris, Bailliere, 1843.
13. Crawford, Paul M., and Sawyer, Harold P.: Intestinal Tuberculosis in 1400 Autopsies, *Am. Rev. Tuberc.* 30: 568, 1934.
14. Goldberg, B.; Sweany, H. A., and Brown, R. W.: Pathological Studies on Tuberculosis Enteritis, *Am. Rev. Tuberc.* 18: 744, 1928.
15. Smithies, Frank; Weisman, Morris, and Fremmel, Frank: Tuberculous Enterocolitis, *J. A. M. A.* 91: 1952, 1928.
16. See 9.

DISCUSSION

Henry C. Sweany (Chicago): Mr. Chairman, Members of the Section: It may seem rather odd that a laboratory man should open the discussion on a paper about which he has absolutely nothing to contribute toward a diagnosis. It is true that the bacteriological examination may reveal acid-fast bacilli, but anybody may show acid-fast bacilli in the stool in connection with positive sputum; so it contributes nothing. It is true that examination for blood will assist in showing if it is an open lesion in the intestinal tract, but that is a common condition. So we come to you with empty hands so far as diagnosis is concerned. But in the anatomical studies the pathologist has something to contribute.

From the standpoint of anatomy we have constrictions

along the gastro-intestinal tract that lead to a basis of diagnosing of the various symptoms. At the pylorus there is a constriction, but there is too much acidity for the tubercle bacilli to develop. In the bowel there is also a constriction at the ileocecal valve, but the concentration of H-ions is such that the tubercle bacilli are capable of penetrating the lymphatics and setting up growth.

In the isolated follicles these bacilli penetrate either by direct extension or else by being pushed in there during the constriction at the ileocecal valve.

The next point of stricture is the rectum, where there is an accumulation of material and the bacilli are quite frequently forced into the lymphatics above this point. There are, therefore, various anatomical features which lay a foundation for the development of the lesions. Remember that tuberculosis of the bowel is like that of the lung, primarily a lymphatic disease. It enters the lymphatics, sets up the early ulceration, and the first thing found is a longitudinal ulcer in the region of the ileocecal valve. Rarely do you see the primary ulcer in any other position of the gastro-intestinal tract. The ulcers gradually extend in each direction from the ileocecal valve, depending on the severity of the condition. As it becomes worse they go toward the pejunum above and toward the transverse colon below, nearly always beginning in the region of the ileocecal valve. Later on these ulcers in the Peyer's patches spread around the bowel and produce the advanced annular ulcers.

Sometimes the lesions are caused by direct trauma, due to an injury produced on the wall of the cecum or ileocecal valve, by direct contact of fecal material passing through.

I think the greatest of all the diagnostic criteria, from a clinical standpoint, is pathological-physiology. It is true these ulcers form a diagnostic basis for x-ray examination, outlining the ragged type of colon and ilium, but the pain and all the other signs that lead to diagnosis are due to a pathologic physiology.

Here we have a great deal more difficulty in analyzing the conditions. We all know the two nerve plexus, the Meissner plexus of the submucosa, and the Auerbach plexus of the muscle layer—the principal nerve distributions of the ilium and colon.

If there is a stimulation of the vagus there is more liable to be a diarrheal condition, and a stimulation of the sympathetic is perhaps more liable to produce a temporary constipation. These two may alternate. You may have a segmental irritation in a small portion of the bowel, where paralysis with flatus and other symptoms may occur. Deep and superficial pain may result. All these things play a very important role in the diagnosis.

Finally, you may have the absorption of toxin from this ulcerated bowel which produces various effects, some of which are loss of appetite, rise in temperature, etc. That, of course, produces loss of weight. Stimulation here again of the sympathetic nervous system will produce a dilatation of the vessels of the whole mesentery, and there results so-called "internal bleeding within the blood vessels" which draws blood to the

mesentery and causes a pallor on the superficial skin surface.

This subject of gastro-intestinal tuberculosis offers one of the most complex problems for accurate diagnosis of any subject there is in medicine, and brings into play practically every aspect of pathology and pathologic physiology in the clinical diagnosis so well given by the authors.

Dr. Morris Weissman, Chicago: We did not attempt to diagnose *tabes mesentericus* because we expected no corroboration on postmortem. At post, *tabes mesentericus* alone is seldom encountered. In its late stages the intestines are so overwhelmingly involved as to dominate the picture. The glandular component is at best represented only as the "burned ashes" of an initial process. However, in general it may be stated, given a case with vague nonlocalized abdominal distress with frequent febrile exacerbations and remissions over a prolonged period of time, especially so if associated with a predominantly hilar and pleuritic type of pulmonary tuberculosis-*tabes mesentericus* may well be suspected. The diarrhea attacks that generally occur may be construed as reflex. Supervening terminal meningitis in a case of intestinal tuberculosis may well suggest the coexistence of *tabes mesentericus* for the interrelation of glandular processes and meningeal involvement is well known.

Certain acute gastro-intestinal conditions may temporarily prove confining. Phrenicotomy, for example, does at times initiate a train of gastro-intestinal symptoms that may prove baffling. Acute pleurisy with effusion, to cite another example may, in the course of its development present severe gastro-intestinal distress. But, bearing in mind their acute episodal nature plus the fact that vomiting is an outstanding symptom readily differentiates them from the more permanent and relatively less acute intestinal tuberculosis in which vomiting is of lesser prominence.

A word about certain tuberculous types with reference to their bearing on extrapulmonary manifestations. These types by their appearance give clue to the organs involved. Thus the flushed—the vasodilator type—frequently shows pulmonary involvement alone. While the process is frequently attended by great toxicity, it usually eventuates in fibrosis. Extrapulmonary tuberculosis is less common and slow in developing if it does occur. The pallid—the vasoconstrictor type—very often spells extrapulmonary involvement, intestinal tuberculosis being the most common. The process is apt to be widespread and with little tendency to fibrosis. Finally the blue—the asthmatoïd-passive congestion type—where the extrapulmonary organs affected are the heart, primarily as myocarditis and the liver and kidneys secondarily. Dr. Hruby, Secretary of the Board of our Sanitarium, aptly sloganed these clinical pictures Red, White and Blue. He suggested that we undertake at some future time to tabulate and correlate the types with the multivariad clinical manifestations met with in our patients. As yet we have no statistical data to substantiate the aforementioned impressions.

PLASTIC AND RECONSTRUCTIVE SURGERY ABOUT THE FACE AND HEAD—THEN AND NOW

JOSEPH C. BECK, M. D.

CHICAGO

It was in the early years of my practice that I began this work in plastic and reconstructive surgery. My first paper was presented in Pittsburgh at the Carnegie Institute before the Triological Society and the question was raised by the Council as to whether or not they would permit me to present it, because there was a doubt in their minds as to whether this phase of surgery belonged to the activities of the "quack." Such cases of esthetic surgery as I showed were not being performed by regular medical men. I was very grateful to Dr. Richards of Fall River, Mass., a member of the Council, through whose efforts I was permitted to read my paper entitled, "Plastic and Reconstructive Surgery About the Face." From that time on there was much of "Love's Labor Lost" in this type of work. The general men and some of the earlier surgeons, especially in Europe, did do some of these operations. The Italian operation, such as binding the arm to the face, was one of the earlier more popular procedures, but the more direct work about the face and ears was performed at a much later period. It was not until twenty years ago, about the time of the World War, that esthetic plastic work came into its own. Today we may be quite proud of the excellence of this work and the splendid results obtained. I also desire to mention the formation of a Board of Examiners who pass upon the ability of the men in this field.

The most interesting part of the work has been the refinements that have been made in rehabilitating individuals who have suffered terrific trauma particularly following automobile accidents. We always insisted upon obtaining a definite history because these people were timid about taking risks as to the final cosmetic results. One was frequently threatened with lawsuits and was accused of having done something that was not acceptable to the patient. In the beginning it was our custom to take stereoscopic pictures of every patient throughout the course

and steps of the operation. Not only pictures, but casts of the face were made so one had something to go by in comparing the results with the initial findings before operation. Some people we actually declined to operate on because one could see that these patients were neurotics



Figure 1. Repair of poorly reduced nasal fracture. Patient was so sensitive about his appearance that he would not permit preoperative photography.

and would never be satisfied no matter how perfect the procedure would be. One important element in the early period was the question of syphilis. We did not have the Wassermann test then and we did operate on a large number of syphilitic patients, some of them having most terrifying lesions. It was surprising how comparatively little difficulty there was encountered in the healing process of these plastic cases.

The old time techniques of plastic and reconstructive surgery can now be considered a thing of the past and the newer methods that have taken their place, especially in luetic cases, is well worth while emphasizing. While we had many disappointments in some plastic cases, the end results obtained then, compare very well with that which one gets now.

I seldom saw a patient who had a great deal of deformity requiring much work who was not grateful for what was done for him, even though the esthetic result was not altogether perfect. Those cases that had minor defects were troublesome to us and still are. There was often a psychic element in that type of patient as I have already stated above.

At this point I should like to say a word about Military Plastic Surgery. During the last war we were unprepared in reconstructive and plastic surgery but today, the United States Army Medical Corps has sufficiently trained plastic surgeons, who are able to give meritorious service in this special branch of military surgery.

Now my associate, Dr. A. M. Berman, will present that part of my paper dealing with the more modern thought of reconstructive surgery, perhaps repeating some of the things I have said in my preliminary remarks, but bringing up the subject to the present day acceptance by the profession. In my closing remarks I shall have something to add regarding plastic rubber prostheses.

PLASTIC AND RECONSTRUCTIVE SURGERY OF THE FACE AND HEAD NOW

The slow but steady progress of plastic and reconstructive surgery has been watched with keen interest by medical science the world over. From a humble beginning in barber shops, hotel rooms and beauty parlors, plastic surgery has



Figure 2. Saddle Nose repaired with cartilaginous implant.

now come to be a recognized specialty, practiced by men who are thoroughly grounded in the principles of present day aseptic surgery. With the ever increasing industrial hazards and traffic accidents, has come an increasing demand for more

efficient reconstruction of maimed parts especially about the head and neck. American surgeons, especially since the World War, have taken a great interest in plastic and reconstructive surgery, and have kept pace with and in many instances even surpassed the skill and artistry of their European colleagues. The quacks and charlatans who have practiced so-called "Cosmetic Surgery" in the past, are rapidly disappearing from the horizon, and their places are being taken by thoroughly trained surgeons who are at last really practicing reconstructive surgery as it should be.

In discussing plastic and reconstructive surgery about the head, it might be well to state that reconstruction of the nose is the most common operation we are called upon to perform. Just as in other phases of surgery, the techniques are fairly well standardized at the present time. The sawing off of a hump on the dorsum, or the elevation of a depressed tip is with very few exceptions a standard procedure and can be found in any recognized text. One of the important phases of rhinoplasty is the repair of a nasal fracture which is so commonly met with today. Straith, DeKleine, Safian and others state that nasal fractures must receive immediate attention and careful reposition of all parts of the nose must be accomplished as soon after injury as possible. Adequate metal splinting devices or mattress sutures passed through the skin and secured by buttons may be used to maintain the position of the parts. If there has been a loss of tissue

diately after injury, or to wait until some later date to effect a repair. Straith believes that loss of tissue should be immediately replaced by a Wolfe Graft. One should remember also that in the repair of a nasal fracture, one should not only take care to effect a pleasing esthetic result, but



Figure 4. Repair of hare lip.

also to obtain a proper airway in the nose. No rhinoplastic procedure is complete without thorough investigation and repair of component parts of the internal nose. (Fig. 1)

Depressions of the dorsum of the nose has offered many problems to the plastic surgeon in the past. At the present time, we treat this deformity by employing cartilage grafts. We use either a piece of rib implant from the patient or some cartilage from a donor. In many institutions cartilage implants from other persons are kept in an aqueous solution of merthiolate in a refrigerator, and these are ready for instant use. Many of us still use ivory implants and although the use of foreign substances in tissues has been decried by many, ivory implants are still used with good results. More recently there has been reported the use of temporary ivory implants in the nose, which is later supplanted by cartilage. It is said that the ivory when left in situ for about six months to a year tends to make a better bed for the reception of the cartilage implant later. The use of bone implants has been discontinued by some surgeons because it was felt that bone had a tendency to atrophy. Although bone is still being used by many, we feel that cartilage is far superior. (Fig. 2).

When there is a loss of an ala, sliding or tube grafts are used to repair the defect. (Fig. 3). The cosmetic end results of such a procedure is not always satisfactory. Recently a new type of rubber prosthesis was developed which is far superior in many cases to surgical repair. In cases



Figure 3. Alar loss repaired by flap from forehead.

from the ala or dorsum of the nose, sliding or tubular grafts may be employed. Care must be taken, however, to accurately match the skin texture and color to the surrounding area. There has been some diversion of opinion as to whether it is best to repair loss of skin by grafting imme-

where the ala has been torn away, immediate and accurate suturing of the parts gives most excellent results.

Many patients, men as well as women, frequently consult the plastic surgeon regarding a plastic operation in order to satisfy their vanity



Figure 5. Repair of post-auricular fistula.

although the deformity that exists is very slight. In the past we have turned these people away because we neglected to take into consideration the fact that even slight deviations from the so-called normal may have a decided effect upon the individual. In recent years, plastic surgeons in conjunction with psychiatrists have studied the psychological consequences of disfigurement on individuals and have come to the conclusion that regardless of how trivial a deformity there may be, that deformity should be corrected if the patient considers himself handicapped either socially or economically. It has been shown that disfigurement about the face is a serious handicap in securing employment, especially in those jobs which necessitate meeting the public. Frequently we find that children with average or better than average mentality are failures in school because they possess some form of facial deformity which makes them the object of ridicule among their classmates. It is gratifying, however, to see these individuals rehabilitated and returned to usefulness through plastic surgery without which they would have been doomed to a life of failure and disappointment.

In the correction of a deformed nose the mastery of the technique of the operation is not the only consideration. The plastic surgeon, if he is going to succeed in pleasing all of his patients, must also have artistic ability and a delicate sense of proportion. A small pert nose on a heavy jawed, large face does not produce a

pleasing esthetic effect. Formerly little attention was paid to molding the nose to suit the individual personality and as a result the plastic surgeon was plagued with lawsuits. Now we study each case by photographs, casts and actual meticulous measurements with specially devised instruments and determine before operation just what type nose would suit that particular individual. It is here that plastic surgery becomes, what Maliniac has so aptly called "Sculpture in the Living." There are many instruments devised for measuring relations of the nose to the rest of the face. Essentially these instruments are variations of several types of protractors. As a general rule the profile line should be at an angle of 25 to 35 degrees, and the length of the nose should never exceed a line drawn from the root of the columella to the tip of the chin. In women, especially, it is better that the length of the nose should be shorter than the chin line. Another important measurement in determining a pleasing esthetic appearance is the determination of the angle between the upper lip and the columella. Safian calls this the septo-labial angle and has shown that it should be between 90 and 105 degrees to be normal. After all measurements are accurately determined and marked off on the patient's photographs and casts a careful psychiatric appraisal of the patient is begun. A thorough physical examination together with complete blood analysis should be



Figure 6. Lip deformity due to lymphangioma. Child refused to attend school until the deformity was corrected.

completed before the patient is admitted to the operating room. Careful surgery with exacting care given to each step in the operative procedure insures a successful end result. The post-operative care in these cases is most important because if this phase of the procedure is neglected

a good operation can be ruined by infection or inadequate splinting devices.

Another important phase of reconstructive surgery is the repair of hare lip and cleft palate. We like to operate on these cases as soon after birth as possible. By experience we have learned that the best results are obtained when early surgery is performed. (Fig. 4). Hare lips have been repaired with most excellent results as early as twenty-four hours after birth. Although the repair of hare lips and cleft palates falls into the realm of plastic surgery, the oral surgeons are taking over more and more this type of work, and rightly so, because of their superior knowledge of the mechanics of the oral cavity.

In accidents where there has occurred lacerations about the face immediate plastic repair of the wound should be done. Haphazard suturing results in scar formations and necessitates a secondary operation for their removal. Every facial laceration should and must receive meticulous approximation of skin edges and adequate post-operative splinting if scars are to be avoided. In those patients in whom we feel there is a tendency to keloid formation superficial x-ray irradiation to the suture line may prevent thickened scars.

The plastic surgeon is frequently called upon to correct abnormally protruding ears. This is a simple procedure which offers no difficulty to the skilled operator. If a crescent shaped piece of cartilage is excised and a new antihelix is formed the spring action of the auricular cartilage is removed and the ears are thus permanently held back. Strict attention to asepsis and snug postoperative dressings preclude the possibility of chondritis and hematoma in these cases.

Rudimentary ears (microtia) and atresia of the ears are still a great problem to the plastic surgeon. Although many cases of reconstructed ear deformities have been reported as excellent results actually they are far from being good. For the most part congenital deformities of the ear lend themselves poorly to plastic reconstruction. Here, again, at least for the present, plastic rubber prostheses correctly made, offer the best esthetic results.

Post-auricular fistulae, as a result of continuous and prolonged packing of the mastoid wound following mastoid surgery is not so commonly met with these days. Now and then a case of this type presents itself for repair. These fis-

tulae are repaired by making a post-auricular incision and splitting the flap in two layers. The inner layer obliterates the mastoid cavity while the outer layer closes the external defect. (Fig 5).

The correction of deformities resulting from tumors both benign and malignant, offers many problems to those practicing this specialty. Space prohibits a technical discussion of deformities resulting from these new growths but suffice it to say that these cases offer most interesting material and oftentimes most excellent plastic results. Cavernous hemangiomas and lymphangiomas although causing marked deformity are readily



Figure 7. Large facial defect due to radical operation for carcinoma of the antrum and showing restoration by rubber prosthesis.

amenable to correction. Fig. 6 illustrates a case of lymphangioma of the upper lip which was operated upon with most gratifying results.

When defects of the face are large, such as a result of radical operation for malignant diseases of the antrum of Highmore, we use rubber prostheses to best advantage in restoring the normal appearance of the patient (Fig. 7). Experience has shown that these cases cannot be restored properly and satisfactorily even with multiple plastic procedures.

Facial paralysis is a deformity which tests the acumen of every plastic surgeon who attempts a correction. Our latest method of correcting this deformity is that of bridging across the defect in the facial nerve with a nerve graft from one of the superficial femoral nerves. Although end to end nerve anastomosis is still practiced the nerve graft method gives better results. Bell's palsy is relieved by removing the bony covering of the nerve canal which prevents pressure atrophy due to edema of the nerve. The decompression operations should be done early if per-

manent paralysis is to be avoided in these cases.

In the practice of reconstructive and plastic surgery one is frequently obliged to correct a receding chin or a protruding jaw of prognathism. Many cases of chin recession can be corrected by introducing ivory, celluloid, or cartilage subcutaneously. Here again cartilage is to be preferred to foreign material implants. In more complicated cases of receding chin, operations upon the mandible and displacement of the condyle may have to be done in order to reconstruct the jaw properly. Great care and caution must be exercised in these cases because not only should one try to achieve a good esthetic result but the biting surfaces must also be carefully preserved. In reconstructing the receding chin or the prognathic jaw, the well trained oral surgeon has a better advantage over the plastic surgeon in many cases, especially where the mechanics of chewing must be restored to normal.

In conclusion we wish to state that plastic and reconstructive surgery offers vast relief from mental anguish and psychic distress and in many cases rehabilitates individuals to a normal useful, social and economic life who would otherwise consider themselves misfits of society because of facial deformity which are either congenital or acquired.

Closing remarks by Dr. Joseph C. Beck: I desire to show some of the newer type casts and moulages and some new material used in making protheses which has been developed by Mr. Gardner of Chicago. This work is being done for us by Mrs. Hall in our office. This (demonstrating) is the latest possible substitute we can offer to patients with complete loss of the external ear. It is much better to have these protheses because one may operate as often as fifteen times, as I did in one case, and still have nothing but a deformity at the end. The protheses are very important in connection with plastic surgery about the face, especially following complete loss of an eye and eyelids, the external nose or any part of it, the whole of the superior maxilla as following resection operations for cancer, or extreme destruction from trauma and infection. (Demonstrating a model of same).

Plastic surgery is now on a plane of such refinement that a man who does a great deal of it will obtain results that at times are unbelievable. I only wish that I was beginning my work in

plastic surgery. However, I take great pleasure now in indicating operations, directing and outlining the procedures in my practice to my associates who received their training from me, and seeing the work done properly.

TRAUMATIC PSYCHOSES

H. H. GOLDSTEIN, M. D.

From the Chicago State Hospital, Edward F. Dombrowski,
M. D., Managing Officer

CHICAGO

With the increasing frequency of automobile accidents, the speeding up of traffic, increased mechanization of factory work and with a new era in alcohol consumption, the question of head trauma has become correspondingly important. There is no other part of the body which, following trauma, is as likely to be followed by death or disability of a severe nature.

In an institution for mental patients, we are concerned with that aspect of head trauma which deals with the mental and neurological manifestations of head injuries, but particularly those mental aberrations which made institutionalization necessary. However, the problem of traumatic injuries of the head is not limited to its medical aspects, for in addition to the medical problem of immediate injury and its sequelae, there are the problems of litigation, which so commonly follows these injuries; the conflicting nature of medical opinions in the courts, human suggestibility, and finally the malingering of some persons with intent to defraud.

Although primarily this discussion will concern itself with the psychoses following head injury, it is believed that a discussion of this kind would be incomplete without first mentioning the so-called traumatic neuroses. Wechsler described these neuroses as cases in which there was no early or late evidence of brain injury, but which were followed by subjective complaints with few organic signs at the time of the accident or afterwards and no evidence of brain injury later. Four subgroups were listed by Wechsler. All of these were associated with subjective symptoms such as headache, vertigo, memory defects, fears, anxieties, vasomotor disturbances, tremors and inability to work.

Obviously, patients with traumatic neuroses are not committed to a state institution unless the symptomatology becomes so pronounced that there is a question of a borderline psychosis. This study was undertaken with the viewpoint of classifying some of the factors pertinent to the etiology and diagnosis of traumatic psychoses. The patients who formed the basis for this study, were selected from among those listed on the hospital records as traumatic psychoses and those admitted during the year 1936-1937 with such a diagnosis or with a history of severe head injury.

The total number of patients studied was thirty-four (34). Twenty-six (26) or seventy-six per cent. (76%) were male and eight (8) or twenty-four per cent. (24%) were female. The preponderance of male over female patients in this group is readily explained by the increased hazards in occupations and activity taken by men and also to some extent by the alcoholic habits of men as compared with women.

The age of the patient was interesting. Two (2) of the patients were between twenty and thirty (20-30) years of age or five per cent. (5%) of the total. Ten (10) or thirty per cent. (30%) were between thirty and forty (30-40) years of age and twenty-two (22) or sixty-five per cent. (65%) were between forty and sixty (40-60) years of age. These findings suggest that in the younger age groups the recuperative powers are better and, except in severe head injuries which result in death, recovery without psychosis is almost certain to occur. Occasionally, mental symptoms suggesting mental enfeeblement may follow such injuries in younger persons. On the other hand, persons in the older age groups are predisposed by vascular changes in the brain and the general lowering of resistance with age to such degrees that trauma sufficiently severe to produce a psychosis in the middle age group probably results in death in the older age group.

As would be expected, injury by or within vehicles was the most common immediate cause of injury to the head. Nineteen (19) patients were injured by or while riding in a fast moving vehicle. All but three (3) of these accidents were caused by automobiles. Two (2) were injured in street car accidents and one (1) in a train wreck. Eleven (11) patients sustained severe injuries to the head during falls. Six (6) of these fell from heights during occupations,

such as painting, house cleaning, etc. Five (5) of the eleven (11) fell during an alcoholic debauch. In three (3) patients injury was sustained by objects striking the head and in one (1) case no history as to the nature of the trauma was available.

The relationship of alcoholism to development of traumatic psychoses was rather obvious as a great number of these patients presented a history of excessive drinking. Of the thirty-four (34) patients studied, fourteen (14) were heavy drinkers of alcohol. At least eight (8) of these were injured while inebriated. In one (1) patient, the development of the alcoholic habit occurred after the injury and seemed to be a part of the symptomatology produced by the injury. Twenty (20) patients had a history of abstinence or no history was available as to alcoholic habits. The author felt that alcoholic excess was a definite factor in predisposing individuals receiving head trauma to marked mental disorder.

An example of the relation of alcoholism to head trauma and traumatic psychoses is shown by the following case history: J. D. was admitted to Ward 23 of the Cook County Hospital on September 19, 1936, with a history of severe head trauma having occurred during an auto accident on the same day. The patient had been drinking and was drunk at the time of the accident. There was a history of previous mental symptoms due to alcoholism. A spinal puncture on admission to the County Hospital revealed the presence of blood in the subarachnoid space. On admission to the Chicago State Hospital, the patient was found to be markedly confused and showed marked impairment in the intellectual sphere. A neurological examination revealed a motor weakness of the left side of the body with the left patellar reflex more active than the right. After several months, the patient had shown considerable improvement and was paroled.

The relationship of skull fracture to development of psychoses is, of course, evident in that the severity of lesions producing a skull fracture is often great and therefore is quite likely to be associated with severe brain damage. It was not possible to check all patients with roentgenologic studies of the skull on admission, but of the cases studied, sixteen (16) or fifty per cent. (50%) were reported in the histories to have

sustained a fracture of the skull according to roentgenologic findings.

One (1) patient had definite clinical evidence of a basal skull fracture although reported as being negative for evidence of skull fracture. In eleven (11) patients, no mention was made of roentgenological study and there was no definite clinical evidence of skull fracture.

It has been the tendency in the past to lay emphasis upon the presence or absence of skull fracture. Although, as evidenced from the above, skull fracture indicates to some extent the severity of trauma, I wish to emphasize that there may be mild trauma with skull fracture and no mental symptoms, mild trauma with skull fracture and mental symptoms, and finally mild trauma with no skull fracture and no mental symptoms. On the other hand, trauma may be exceedingly severe with no skull fracture and no mental symptoms, or both skull fracture and mental symptoms. The difficulty of roentgenologic diagnosis of basal skull fracture is another factor to be considered in evaluating their importance.

Histories are highly unreliable for determining the period of unconsciousness since the relatives' opinions are the basis for the report in a great number of instances. However, in many cases such reports came from the hospital in which the patient had previously been. Again the factor as to just what constituted the period of unconsciousness was not always definitely delineated clinically.

In fifteen (15) or forty-four percent. (44%) of the cases, a history of unconsciousness of a period exceeding twenty-four hours was available.

In many of these cases, the report indicated that many days and even weeks elapsed from the time of injury to the recovering of consciousness. One of these patients had a period of unconsciousness followed by a lucid interval of several days and again a period of unconsciousness. Surgical intervention was indicated and on opening the skull a subdural hematoma was found. In four (4) or twelve per cent. (12%) of the cases, a period of unconsciousness of from a few minutes to several hours was reported and in fifteen (15) or forty-four per cent. (44%), there was no report as to the period of unconsciousness in history. The absence of such a report does not mean that no period of consciousness existed so that the total number who actually suffered such a loss, is probably in excess of that indicated. It is quite evident that a period of prolonged coma is a significant prognostic sign as to the possible development of a traumatic psychosis. It seems self evident that prolonged coma is indicative of severe brain injury which in turn is apt to be followed by persistence of mental symptomatology.

Spinal punctures were not done by the author except in a few instances but the following record of the spinal fluid findings is included in this study for the sake of completeness. The report was obtained from the social service records of the Cook County Hospital which accompanied every patient, or from spinal punctures performed after admission to the state hospital. There were a total of eighteen (18) reports available in the thirty-four (34) patients studied. No reports were available on the other sixteen (16) patients.

No.	Unconscious	Period of Unconscious	Spinal Taken After Injury	Cells	Pandy	R. Jones	Lange and Serology
1.	Yes	Unknown	1 day	38	++	++	0
2.	Yes	Unknown	1 day		NO BLOOD IN SPINAL FLUID		
3.	Yes	Unknown	1 day		BLOODY SPINAL		
4.	Yes	4 days	9 days		XANTHOCHRONIC FLUID		
5.	Yes	1 week	2 wks.	4	0	0	0
6.	Yes	Unknown	2 wks.	0	0	0	0
7.	Yes	sev. days	2 wks.	2	0	0	0
8.	?	?	7 wks.	3	0	0	0
9.	Yes	sev. days	2 mos.	0	0	0	0
10.	Yes	sev. days	4 mos.	14	Trace	Trace	1113321000
11.	Yes	5 days	5 mos.	?	+	+	0
12.	Yes	2 weeks	6 mos.	5	0	0	0
13.	Yes	Unknown	6 mos.	12	+	+	0
14.	No	0	1 yr.	11	0	0	0
15.	?	?	2 yrs.	0	0	0	0
16.	Yes	2 days	5 yrs.	2	Trace	0	0
17.	?	?	5 yrs.	2	0	0	0
18.	Yes	?	11 yrs.	4	0	0	0

The accompanying chart shows the findings in the patients studied. In only four (4) patients, were reports available within two weeks of the date of injury. In two (2) of these the report indicates definite evidence of blood in the spinal fluid. In one patient, although no mention was made of evidence of blood in the spinal fluid, other findings were present suggestive of changes in the central nervous system. In one (1) patient, the report read no blood in the spinal fluid. Although the author would like to avoid definite conclusions based on the findings noted in the chart, nevertheless, one would tend to feel that spinal fluid findings suggestive of trauma, occur shortly after the injury responsible for the development of psychoses but that such findings are reversible.

Occasionally during the classification of patients with a history of injury to the head, a diagnosis of traumatic psychosis is offered in spite of the fact that the injury was sustained many years before the onset of the psychosis. There were four (4) patients, two (2) of whom were not included in this study, whose psychoses developed after a lapse of time of more than several months' duration between the date of injury and the onset of the psychoses. The two (2) patients not included in the group, were classified as traumatic psychoses. However, in both instances, the injury to the head occurred many years before the onset of the disease and the injury itself was described in the histories as apparently of not sufficient severity to cause unconsciousness. The mental symptomatology at the time of admission was that of schizophrenia and the clinical course substantiated the diagnosis of schizophrenia. It was definitely felt that the two (2) patients were mistakenly diagnosed as suffering from a traumatic psychosis. Of the thirty-four (34) patients included in the study, only two (2) could definitely be said to have developed a mental disorder some time after the injury. In one case, the patient developed Jacksonian epilepsy after a lapse of several years following the accident and concomitant with the development of convulsions the patient developed mental symptoms. The other patient suffered a basal skull fracture followed by loss of hearing in both ears and development of paranoid ideology two years after the accident. It would seem inadvisable to venture a diagnosis of traumatic psychosis in an individual whose men-

tal symptomatology first manifests itself some time after the accident.

The frequency with which neurologic findings were noted is not surprising for one would expect an injury sufficiently severe to produce mental changes, would also produce brain damage severe enough to result in permanent neurologic manifestations. The involvement of cranial nerves was most frequently seen in third, fourth and sixth nerve damage. In ten (10) patients, there were found such neurologic findings as unequal pupils, non-light reacting pupils, irregular pupils, strabismus due to rectus muscle weakness and ptosis. Six (6) patients, developed hearing defects following the head trauma and six (6), were reported as having a facial paralysis or weakness. In five (5) patients, dysarthria was noted while there was no mention in the history of any defect in the twelfth nerve, and in three cases, definite paralysis of the hypoglossal nerve was present. In one (1) patient, a paralysis of the spinal accessory nerve existed. Eleven (11) patients, had evidence of pyramidal tract disease manifesting itself in conditions varying from a complete hemiparesis to an inequality of reflexes. Thus twenty-four (24) of the thirty-four (34) patients, had neurologic findings with variations from minor pupillary changes to alternating hemiplegias. The frequency with which neurologic findings accompany the occurrences of a traumatic psychosis suggests that patients showing persistent neurologic findings following the period of unconsciousness, are probably more likely to have a psychosis than those in whom neurologic findings soon reversible disappears.

The mental symptoms noted, varied from an acute delirium, with disorientation, disconnected speech, semi-stupor to coma, followed by amnesia with rapid recovery, to a profound dementia. A fairly large number of the patients showed a Korsakow-like syndrome, with confabulation and fabrication, disorientation and loss of memory for recent events. A dementia simulating the condition seen in mental defectives was not uncommon. Especially interesting were two cases of paranoid type of psychoses in both of which there was impairment of hearing. However, no attempt was made to carefully evaluate the symptoms. The prognosis seemed to be more favorable in patients with an acute delirium. Recovery was uncommon in cases which showed no pronounced improvement in from five to six

months. Death was most likely to occur in patients who remained disturbed and disoriented for some time, and began to show a downhill course due to exhaustion and inanition.

CONCLUSIONS

In a study of thirty-four (34) cases diagnosed traumatic psychoses, the following was concluded:

1. Males are predisposed to head injury, therefore more apt to develop a traumatic psychosis.
2. Individuals of the older age groups are most likely to become psychotic after trauma to the brain.
3. Injuries are more commonly caused by and in vehicles than by any other agent.
4. Alcoholism is frequently an associated factor in head injuries which are followed by mental manifestations.
5. Skull fracture is found in a large percentage of cases, but the injury to the brain and not the cranium is the important factor.
6. A long period of unconsciousness following trauma is presumptive evidence of sufficient brain injury to make the development of a traumatic psychosis more likely.
7. Psychoses which do not appear shortly after head injury are not apt to be traumatic psychoses.
8. Neurologic findings are very common in individuals who, following a head injury, have developed a psychosis.

PSYCHOTIC REACTION FOLLOWING TRAUMA

D. LOUIS STEINBERG, M. D.

ELGIN, ILLINOIS

The importance of head trauma as an etiologic factor in psychotic reaction has long been a debatable question. This may be due to the complexity of factors that must be evaluated in establishing causal relationships. There are numerous

From the Elgin State Hospital.

I wish to acknowledge my appreciation to the following: Dr. Charles F. Read, Managing Officer, for his encouragement, suggestions and constructive criticisms; Dr. Erich Liebert, Clinical Director, for suggesting the problem and for his assistance in outlining the approach to the problem; and Phyllis Wittman, Ph.D., for the psychometric studies on these patients.

Read before Physician's Association of Department of Public Welfare, Illinois State Medical Society, May 2, 1939, Rockford.

reports dealing with so-called post-traumatic neuroses,¹³ but there are comparatively few concerned with the role of head trauma as initiating psychotic reactions,^{4, 5, 10} or precipitating such syndromes as general paralysis and arteriosclerosis.^{2, 3, 11, 12, 13}

In spite of the evident increase in incidence and interest in this subject,^{4, 7, 13} as emphasized in the preceding paper, none of the large insurance underwriters contacted had any available statistical data.

A survey of the literature indicates that the majority of the psychotic reactions immediately following trauma are reversible and this has given rise to an impression that the prognosis for post-traumatic psychoses is good.^{6, 8} In a mental hospital such as Elgin, however, we receive patients whose acute symptoms of trauma have subsided, but whose psychotic reactions are severe and prolonged enough to necessitate institutionalization.

The histories of the 4,500 patients that comprise the present population of the hospital were reviewed, in addition to checking the statistical files from 1928 to the present, for "post-traumatic" diagnoses. The patients with a definite history of trauma were studied carefully to determine if there was any relationship between the trauma and the development of psychotic symptoms. All those with inadequate histories in which the relationship was questionable—and there were a great many of these—were excluded from our study, as also the cases of psychoneurosis and schizophrenic-like reactions, the latter because they will be reported in the following paper.

The final material for this study consists of 37 subjects—four diagnosed general paralysis, one diagnosed cerebral arteriosclerosis, both with history of head injury—and 32 patients with psychotic reactions initiated by such trauma.

There is no accepted criterion for proving trauma to be a precipitating factor in general paralysis; however, the latency period from time of injury to onset of the symptoms of paresis is thought to be a measure of the importance of the trauma.^{2, 3, 12, 13} The similarity between some of the post-traumatic symptoms and those of general paralysis makes an evaluation of the role of trauma extremely difficult in long standing cases such as ours.

In a population of 452 patient suffering from paresis, only four classified for our group. Of these, two showed symptoms of paresis immediately after trauma, one six months after and one a year after the injury. These results, showing a probable relationship between trauma and onset of paresis in less than one per cent., corroborates the opinions of Kinier Wilson and Strauss and Savitsky that trauma as a precipitating factor in paresis is negligible.

From 325 patients diagnosed psychosis with cerebral arteriosclerosis, only one patient developed mental symptoms soon after the head trauma.

The 32 cases in which head trauma appeared to be the initiating factor in the development of a psychosis, included the following psychiatric diagnoses: 29 cases of posttraumatic syndrome and one case of Parkinsonian syndrome, one psychosis with mental deficiency and epilepsy, and one case of chronic alcoholism.

In this group of cases there were no reported factors in the heredity or pretraumatic life of the patient which could be interpreted as predisposing the patient to a psychotic reaction following the head trauma.

Three of our cases had sustained more than one severe head injury, but although they showed definite evidence of brain damage after the first trauma, mental symptoms were not severe enough to necessitate institutionalization at that time. Case 1 had a severe head trauma at the age of seven which resulted in mental enfeeblement. At the age of 34 a second accident resulted in a skull fracture, following which he developed a psychosis and was institutionalized one year later, and since then has been showing a progressive dementia.

Case 8 at the age of 42 fell from a roof and following this developed epileptiform seizures. He had a series of three more accidents, the last one at the age of 48, at which time he was committed to the institution. He has continued to have generalized epileptiform seizures and has developed deafness and a marked dementia.

Case 15 had a skull fracture very early in life; treated by decompression. At age of 39 he was struck on the head by a board and then developed epileptiform seizures and mood swings.

Statistical analyses brought out the following data:

Table 1 lists the most frequent causes of head trauma. Falls from a height are most numerous, with automobile accidents a close second.

The other part of this table indicates the type of injury and shows the predominance of recognized skull fractures. It is possible that among those diagnosed as concussions there may have been a few unrecognized skull fractures. This analysis indicates that skull fracture and concussion are of approximately equal significance as far as prognosis is concerned.

The age at time of accident varied from 1½ to 53 years, with the greatest frequency in the 4th decade and greatest number of admissions to the institution during the 5th decade. Table 2 corroborates the opinion held by many authors^{1, 8}

TABLE 1
RELATIONSHIPS OF ACCIDENT TYPE AND INJURY TYPE TO PROGNOSIS

Accident Type	Present Status			% of Total
	No. Imp.	No. Stat.	No. Det.	
Fall from Ht.	3	1	6	31%
Auto Accident	4	2	2	25%
Crushing Injury ....	..	3	1	13%
Gun Wound ....	..	1	..	3%
Unknown	4	..	5	28%
Total	11	7	14	100%

Injury Type	Present Status			% of Total
	No. Imp.	No. Stat.	No. Det.	
Skull Fracture	4	5	8	54%
Concussion	5	1	5	34%
Severe Bruising	2	..	1	9%
Bullet Wound ....	..	1	..	3%
Total	11	7	14	100%

TABLE 2
RELATIONSHIP OF AGE DATA TO PROGNOSIS
ACCIDENT AGE

Age Level	Present Status			
	No. Imp.	No. Stat.	No. Det.	% of Total
0- 9 yrs.	1	..	1	6%
10-19 yrs.	1	2	1	12%
20-29 yrs.	2	1	1	12%
30-39 yrs.	3	1	3	23%
40-49 yrs.	4	2	4	32%
50-59 yrs. ....	..	1	4	15%
Total	11	7	14	100%

ADMISSION AGE				
Age Level	Present Status			
	No. Imp.	No. Stat.	No. Det.	% of Total
0- 9 yrs. ....	..	..	..	..
10-19 yrs.	1	..	..	3%
20-29 yrs.	4	2	1	22%
30-39 yrs.	4	..	2	18%
40-49 yrs.	1	3	3	28%
50-59 yrs.	1	2	8	35%
Total	11	7	14	100%

that the later in life the accident, the poorer the prognosis.

The duration of symptoms is also a factor in the prognosis. The common opinion is that if the symptoms have persisted for two years or more, the prognosis is poor.^{5, 13} In our material the majority of the patients were admitted to the institution at least two years after the accident.

The onset of physic symptoms following trauma is most often immediate, but there may be a latent period between recovery from the acute symptoms and onset of psychosis. An analysis of our data shows that in 28 or 87 per cent. there was no recognizable latent period. In three cases or 9 per cent. there was a latent period of three to five months, and in one case, of four years. The preponderance of cases showing a continuation of symptoms makes one suspect that with more adequate histories some evidence of mental symptoms would have been found in the other four cases also during the so-called latent period.

Seven patients or 22 per cent. developed their first epileptiform attack from five months to eight years after the accident, with all the evidence pointing to an organic origin.

The reaction to a severe head trauma is usually, though not necessarily, initiated with a variable period of unconsciousness and follows a regular sequence of delirium, confusion, memory defect, confabulation, etc., on to either apparent recovery or progressive deterioration; or may remain stationary at any level.

Table 3 shows the variability and frequency of the acute reactions. Unconsciousness, delirium and confusion are most frequent. Irritability, uncooperativeness, headaches, convulsions and

memory defects are next in frequency. Confabulation was noted only once, which is not in accord with the usually reported^{8, 13} sequence of reintegration of brain function following unconsciousness due to head trauma.

One of the most important reasons for institutionalization of a patient is his inability to adjust in his former environment. This is due to some change in personality reaction.

Table 4 gives a differential analysis of the pretraumatic and post-traumatic personality types. Because of the difficulty in many cases of classifying personality under one general heading, several descriptive terms are used, consequently the number of frequencies in this table is greater than the number of patients. It will be noted that there is a marked shift in the personality traits. Before the trauma more than one-half of these patients were considered of social or average personality; after the trauma not a single case could be thus reported. The most frequent post-traumatic personality traits exhibited were irritable, paranoid and anti-social components. There is no striking relationship between personality type and prognosis, but for those patients showing a paranoid post-traumatic reaction the prognosis appears to be poor.

Many authors^{9, 13} have emphasized the frequency of subjective complaints of patients following head trauma, such as headaches, dizziness and fatigability. In this group these complaints were relatively infrequent.

All have definite pathologic organic brain lesions. Headache, which is stressed in the liter-

TABLE 3
RELATIONSHIP BETWEEN ACUTE REACTION
TYPES AND PROGNOSIS

Acute Reaction Types	Present Status			
	No. Imp.	No. Stat.	No. Det.	Percentage of Total Cases
Unconsciousness	6	3	11	63%
Delirium and Confusion....	4	3	11	56%
Personality Defects	4	2	10	49%
Emotional Defects	4	2	6	37%
Memory Defects	3	1	7	34%
Hyperactivity	4	2	3	28%
Muscular Incoordination ...	..	..	7	22%
Headaches	4	..	3	22%
Habit Loss .....	..	..	4	12%
Hallucinations	2	..	2	12%
Retardation	1	..	3	12%
Sensory Impairment .....	..	1	2	9%
Delusions	1	1	2	9%

TABLE 4
RELATIONSHIPS OF PRE-TRAUMATIC AND POST-
TRAUMATIC PERSONALITY TO PROGNOSIS

Pre-Traumatic Personality	Present Status				% of Total
	No.	Imp.	No.	Stat. No. Det.	
Social	4	..	3	3	31%
Average	2	..	1	4	22%
Alcoholic	3	..	2	2	22%
Asocial	2	..	..	3	15%
Irritable	1	..	1	2	12%
Antisocial .....	..	..	1	1	6%
Inadequate .....	..	..	..	1	3%
Unknown	2	..	..	3	15%

Post-Traumatic Personality	Present Status				% of Total
	No.	Imp.	No.	Stat. No. Det.	
Irritable	5	..	2	5	38%
Antisocial	1	..	1	6	25%
Paranoid .....	..	..	2	5	22%
Asocial	1	..	1	3	16%
Apathetic	1	..	1	3	16%
Childish	1	..	..	2	9%
Hysterical	11	..	..	..	6%
Alcoholic .....	..	..	1	..	3%

ature as a very frequent symptom, is complained of by only 27 per cent.

In the large majority deterioration was present in the emotional, occupational and ethical spheres, as well as in the intellectual field. Forty-seven per cent. expressed delusional ideas, while definite hallucinatory experiences were elicited in only 21 per cent.

Table 5 gives the psychometric indices of deterioration as determined by the Babcock scale. The higher the negative score, the greater the degree of deterioration. A negative score of 3.5 or more is considered of pathological significance. The majority of cases tested on admission when retested for this study showed higher negative scores, indicating the progresive nature of the intellectual deterioration.

Complete neurological examination revealed a variety of pathological reactions. Table 6 shows a predominance of cranial nerve involvement which might be explained by the fact that the head was the site of trauma. Some neurological symptoms were present in all but one case. In a few patients finer neurological tests had to be employed to elicit the evidence for involvement of the neural pathways. In three cases in which the injury involved the frontal bone the clinical signs, both neurological and mental, pointed to a lesion of the frontal lobe.

Many investigators¹³ consider alcohol to be a factor directly associated with both incidence and

prognosis in head trauma, i. e., the damaging effect of the alcohol makes the brain tissue more susceptible to traumatic injury. Table 7 shows the frequency of alcoholism in our cases and a comparison with their present mental status. Deterioration is as frequent in the non-alcoholic

TABLE 6
FREQUENCY OF NEUROLOGICAL SYMPTOMS

Neurological Findings	F. equencies	Per cent. of Total Cases
Cranial Nerve Involvement	25	76%
Pyramidal Tract Involvement.....	14	37%
Muscle Tone Impairment	12	43%
Aphasia	2	6%
Convulsion	7	15%
Extra Pyramidal Tract Involvement...	3	9%

TABLE 7

A—The Alcoholic Factor as Related to Prognosis.
B—Present Mental Status.

Alcoholic Factor	Present Status			% of Total
	No. Imp.	No. Stat.	No. Det.	
Excessive	5	3	3	34%
Mild and P.	1	2	1	13%
None	4	1	6	34%
Unknown	1	1	4	19%
Total	11	7	14	100%

— A —

Present Mental Status	No. of Cases	% of Total Cases
Recovered	5	15%
Improved	6	20%
Stationary	6	65%
Deteriorating	15	..
Total	32	100%

— B —

TABLE 5
PSYCHOMETRIC FINDINGS

Case No.	On Admission		Time Interval	On Retesting		Present Mental Status
	Voc. I. Q.	Det. Index		Voc. I. Q.	Det. Index	
1	95	—0.1	4 yrs.	?	—5.7	Deteriorated
2	90	—3.3	2½ yrs.	94	—4.8	Deteriorated
4	..	..	..	102	—8.7	Deteriorated
6	94	—2.0	6 mos.	94	—0.6	Recovered
7	..	..	..	58	—2.5	Deteriorated
8	Uncooperative	..	3 yrs.	Uncooperative	..	Deteriorated
10	70	—3.1	..	..	..	Deteriorated
13	90	—1.3	..	..	..	Stationary
18	..	..	..	51	—5.9	Stationary
19	..	..	..	72	—0.8	Deteriorated
20	88	—4.9	6 yrs.	75	—5.0	Deteriorated
21	..	..	..	107	—2.8	Deteriorated
22	75	—3.0	1½ yrs.	70	—1.5	Improved
23	98	—1.7	5½ yrs.	94	—4.2	Deteriorated
24	..	..	..	106	—7.9	Deteriorated
26	50	—3.0	2½ yrs.	47	—3.5	Improved
27	94	—4.2	5 yrs.	94	—2.9	Improved
28	100	—2.2	..	..	..	Improved
29	112	—3.0	1 mo.	112	—3.9	Stationary
30	90	—2.3	3 yrs.	95	—2.8	Stationary
31	50	—3.0	..	..	..	Deteriorated
32	82	—3.2	2 mos.	82	—2.0	Recovered

group as in the excessive and mild alcoholic groups, but the groups are too small to allow any conclusions to be made.

An analysis of the prognosis for the cases as a whole shows that 65 per cent. appear to be stationary or deteriorating. Of the 35 per cent. considered improved only 15 per cent. were recovered or at least improved sufficiently to be discharged from the hospital. This would indicate that the statistical prognosis for post-traumatic psychosis due to severe head injury should be considered poor.

CONCLUSIONS

1. The importance of head trauma as a precipitating factor in general paralysis and arteriosclerosis appears to be negligible.

2. Cases due to severe concussion without demonstrable skull fracture show deterioration as frequently as those with definite skull fracture.

3. The symptoms of prognostic significance for ultimate deterioration appear to be age at time of accident, occurrence of convulsions and paranoid reaction following the trauma.

4. Subjective complaints were relatively infrequent and could not be considered any indication of the amount or severity of the existing organic changes.

5. Head trauma appears to have initiated a definite shift in the most prominently expressed personality components.

6. The most frequent expressions of neurological manifestations were signs of cranial nerve and pyramidal tract involvement, as well as disturbed muscular tonus. In three of the cases the mental syndromes could be related to frontal lobe lesion.

7. Studies of the mental efficiency level in these cases indicate a progressive intellectual deterioration.

8. Analysis of 32 cases indicates a poor prognosis for those cases with prolonged psychotic syndrome following head trauma.

BIBLIOGRAPHY

1. Gotten, N.: Head Trauma; Report of 141 Cases, *J. A. M. A.* 110: 1727-1730, 1938.
2. Gordon, A.: Delayed Organic Disease of the Nervous System following Trauma, *Trans. A. Neur. Assoc.* p. 218-224, 1930.
3. Klander, J. V., and Solomon, H. C.: Trauma and Dementia Paralytica, *J. A. M. A.* 96: 1-7, 1931.
4. Malzberg, B., Ph.D.: A Note on the Rate of First Admissions of Traumatic Psychosis, *Psych. Quart.* 2: 445, 1937.

5. Mapother, E.: Mental Symptoms Associated with Head Injury; The Psychiatric Aspect, *Brit. M. J.* 2: 1055-1061, 1937.
6. Pilkington, F.: The Treatment of the Mental After Effects of Head Injury, *Irish J. M. Sc.* 742-745, Dec. 1937.
7. Ramsay, F. B.: Head Injuries from Highway Accidents, *J. Ind. M. A.* 31: 332-334, 1938.
8. Symonds, C. P.: Mental Disorders following Head Injuries, *Proc. Roy. Soc. Med.* 30: 1081-1094, 1937.
9. Strauss, I. and Savitsky, N.: Head Injury; Neurologic and Psychiatric Aspects, *Arch. Neur. and Psych.* 31: 893-955, 1934.
10. *Ibid.*: The Sequelae of Head Injury; The Psychogenic Factor, *Am. J. Psych.* 91: 189-202, 1934.
11. *Ibid.*: The Sequelae of Head Injury, *N. Y. S. J. Med.* 37: July 1, 1937.
12. Wilson, S. A. Kinnier: Role of Trauma in the Etiology of Organic and Functional Nervous Disease, *J. A. M. A. Dec.* 29, 1923.
13. Wolfson, I. N.: Psychiatric Aspect of Head Injuries, *Psych. Quart.* 12: 137-174, 1938.

SCHIZOPHRENIC-LIKE PSYCHOSIS FOLLOWING HEAD INJURIES

LOUIS B. SHAPIRO, M. D.

ELGIN, ILLINOIS

Schizophrenic-like psychosis following head injuries has received little attention, while the role that the head trauma plays in producing the so-called posttraumatic psychosis has been studied extensively. The literature also contains reports on the relationship of general paresis to trauma, the incidence of Parkinson's state following severe head injuries or the development of arteriosclerotic and senile conditions.

In 1934 Schilder,¹ in a study of psychic disturbances after head injuries, concluded that the catatonic symptoms may be a sign of local lesion induced by a severe head trauma and that emotional disturbances toward schizoid, psychopathic and epileptoid trends may result from organic changes due to trauma. Meyer,² on the other hand, summarized his experiences by saying the trauma is merely a contributing factor in the production of such states as manic-depressive, catatonic deterioration and paranoid conditions.

The psychoanalysts, especially Freud, Ferenczi and Abraham,³ have claimed that too much attention is placed on the physical aspect, while important, unconscious forces are neglected. Others have suggested that the trauma may produce profound effects from a psychogenic point of view. The question arises whether the trauma releases a latent schizophrenic process that would have developed in the course of time, or whether

Read before Physician's Association, Department Public Health, Illinois State Medical Society, May 2, 1939, Rockford

these cases diagnosed as dementia praecox are not really such, but simply schizophrenic-like pictures. In reference to this problem, Rosanoff et. al.,⁴ in his work on the schizophrenias occurring in twins, makes the following comment: "A more detailed scrutiny of the material suggests the possibility of separating out from amongst this so-called schizophrenic psychosis, a large group of cases that seem to occur on a basis of partial decerebration, mainly of traumatic or infectious origin."

This communication is an attempt to determine whether or not those cases of schizophrenia developing after severe head injuries are in any way different from those that come on without severe head trauma.

Out of 2,000 cases of dementia praecox that comprise the resident population of Elgin State Hospital, a large number were found that showed some relationship to a severe head injury, but only those were selected in which the connection between trauma and onset of mental symptoms could not well be discarded. The casual relation between the trauma and psychosis was strongly suggested by the following statements that occurred in some of the histories: "Following the accident he became stubborn, indifferent to relatives, restless, sleepless, took long walks by himself," or "Struck down in a drunken brawl, sustained a skull fracture; was unconscious for many hours; remained dazed and clouded for several days; slowly cleared up, but never returned to normal," or, "He has not been well since his injury; was struck by an auto and sustained a skull fracture; memory noticeably poor."

In all cases the onset of mental symptoms occurred within a few hours to three months after the injury. In eleven there was a variable period of unconsciousness after the trauma. All were diagnosed as dementia praecox. The present study, including a detailed examination of the records, as well as observation and mental examination of these patients, shows that two different kinds of reaction may occur. In one group the picture is unmistakably that of schizophrenia and can in no way be distinguished from that which develops without history of precipitating trauma. The psychosis in these cases is characterized by the cardinal symptoms of schizophrenia, namely, a peculiar alteration in thinking and feeling, with a withdrawal from reality.

In the ten patients that comprise this group, five had definite psychopathic tainting in the family stock. Six were unmistakably introverted in personality makeup prior to the onset of psychosis, two were extroverted, and in two the data were not convincing. Five patients became seclusive, indifferent, careless, apathetic and exhibited very little spontaneity. In four, the speech became irrelevant and incoherent. All had feelings of external control, hallucinated actively, and presented delusional ideas of a bizarre nature. These patients now show a picture of hebephrenic deterioration. In spite of the fact that some have received shock treatment, no improvement could be seen in any of these patients. As an example, note the following:

Case 1. Twenty-six-year old, single, white male, admitted to Elgin State Hospital 5/29/26. Mother had dementia praecox; sister was neurotic. He had a grammar school education and worked for several years for an electric company. He was not only interested in radio and electrical apparatus, but showed marked mechanical abilities. Described as a seclusive and head-strong personality. Showed no interest in women. He was struck unconscious in an auto accident at the age of 25. Considered queer ever since. Said he was the son of God and could communicate with the world through radio and electricity. He feared someone was after him. When admitted he hallucinated actively, laughed without cause, spoke of Knights of Columbus being after him. For thirteen years he has continued to be delusional; speaks of electrical transmission draining his power. At times he talks irrelevantly and incoherently. He is alternately angry, laughing, indifferent, and at times has passed into short episodes of catatonic excitement.

Case 2. Twenty-eight-year old, single, white female admitted 11/22/38. Brother is a schizophrenic. She was graduated from high school at 16, and had a good work record until 1931, when she received a blow on the head in an auto accident and was unconscious for several hours. Within several months she became paranoid and suspicious; thought she was psychic, that she was being impersonated and involved with dope peddlers and white slavery traffic. At times she was quiet, distracted, and subject to laughing spells. On admission she was sullen, resistive, angry, but for no reason would become pleasant and cheerful for short periods. She expressed ideas similar to those mentioned before and named a certain girl friend as the chief impersonator and persecutor. She was treated with insulin, without result.

In contrast to the above cases, eleven patients did not seem to fit into this series because of a quite different symptomatology. It is true that these eleven cases presented impulsive laughter, apathy, indifference, mannerisms and peculiar, bizarre delusional ideas, but in addition there were symptoms that seemed to be

definitely connected with the head trauma and strongly suggestive of parenchymal damage. For instance, five patients complained of persistent headache, two had a history of epileptiform seizures, two complained of confusion and dizziness, and they all showed impairment of memory and orientation. In contrast to the first group the heredity in these patients showed tainting in two cases only. The prepsychotic personality in seven patients did not present introverted trends; they were at least ambivert, if not extrovert. In the remaining four the data were insufficient. The final outcome in these eight cases did not seem to differ from those presented in the beginning. After several years they leveled off and presented a picture of indifference, laziness and unconcern about surroundings. Three cases have not reached this level yet, even after a period of seven years. The following case reports illustrate the behavior of the patients in this group.

Case 3. Thirty-year-old, single, white male, admitted 6/19/29. Father said to be alcoholic. Third grade education at ten years of age. Truck driver by occupation; was in the St. Charles School for Boys because of chronic truancy. He was shot through the head in April of 1919. Soon thereafter he had two convulsions and several others at intervals since. Since 1933 there has been a marked defect in the various memory spheres and persistent complaints of headaches and dizzy feelings.

He was admitted to Elgin because he was unmanageable. Here he was quiet, careless, manneristic, appeared dazed, complained of hearing women's voices saying nasty things. He experienced body sensations which he referred to as electrical interference. He complained that someone read his mind. Enemies were persecuting him. He was being watched, followed and laughed at. He heard them call him names and saw reference to himself in the newspapers.

During the next ten years he made several attempts to escape from the institution. Usually he has been observed standing about in a dull and apathetic manner; continues to complain of women's voices and states that the sun, moon and stars are influencing him. His speech is irrelevant. He is irritable and profane. No convulsions have been observed while hospitalized.

Case 4. Twenty-seven-year old, single, white male, admitted 7/10/37. Family history negative; grammar school education; good work record; sociable, jolly, enjoyed companionship, and went out frequently with mixed groups. He suffered a skull fracture in January, 1933, and was unconscious seventy-six hours. Soon thereafter he became stubborn, indifferent, restless and sleepless. He blocked in his speech, had laughing spells, was quiet for long periods of time, showed forgetfulness, carelessness of personal appearance, complained of continuous pain in top of his head. At times was out of contact; on other occasions was fearful, had a sense of impending danger, pointed to imaginary things in the room and made faces. On admission to Elgin he was indifferent, showed little energy in the performance of his movements, was manneristic, inattentive and seclusive. Complained of headaches every day. Felt fearful, but couldn't ex-

plain why. He heard men's voices, but couldn't tell much about them. Recent and remote memory and calculation were markedly impaired. He appreciated the defect in his memory. During the past two years he has continued to complain of pressure in the back of his head, showed lack of energy, masturbated excessively, was manneristic and utterly indifferent.

COMMENT AND CONCLUSIONS

Out of 2,000 schizophrenics 21 cases showed a rather definite relationship between trauma and the onset of psychotic symptoms. The question whether damage to the brain acts as a releasing factor of an underlying schizophrenic mechanism, or whether the changes themselves are responsible for the symptoms cannot be satisfactorily answered. It is known that in any organic brain disease schizophrenic symptoms may occur, but conclusive evidence is required to show that these changes are responsible for the mental symptomatology. In our first group of patients there was no evidence of brain injury, but still the mental symptoms developed in such a close time relationship to a severe head trauma that this casual sequence of events cannot be disregarded. These patients were all of introverted personalities and had marked hereditary tainting, so that the possibility of schizophrenic-like reaction was present. Due to the injury, this latent tendency became overt and the psychosis which followed the trauma was that of a so-called schizophrenia. We would conclude that in this group the trauma acted simply as a precipitating factor.

In the second group, comprising 11 cases, evidence of brain damage was present. Confusion, dizziness, defects in memory and orientation, as well as persistent headaches with irritability do not belong commonly in a schizophrenic-like picture. Furthermore, in seven of these cases, the pre-psychotic personality was well integrated and hereditary tainting was present in only two. Aside from the mentioned symptoms, these patients presented a schizoid picture. They were all diagnosed dementia praecox and eight of them showed in the course of time a complete deterioration. Still, the neurological changes, the mixture of organic-like mental symptoms and the absence of any predisposing factors in the history suggest that in these cases the trauma did more than precipitate a psychotic reaction. In producing pathological changes in the brain, the

injury would seem to have contributed to the formation of the clinical picture. Although autopsy findings are as yet not available in this group, the development of Parkinsonian-like syndrome in one case and evidence of hemiplegia and convulsions in another suggests a localized brain damage.

In evaluating the role which the trauma plays in the schizophrenic-like picture, one should always pay attention to the personality as a whole. In all cases of so-called schizophrenia one should consider whether the psychosis is not attributable to some definite etiological factor, such as trauma, infection or tumor. Many studies are now being carried on in cases of schizophrenia. The results are interesting, but certainly of questionable value if the study consists of patients whose psychosis can be attributed to some definite etiological factor. Therefore, the need is emphasized to be more exact in evaluating all mental symptoms, so that these patients may be differentiated from the so-called schizophrenia in which no traceable etiological factor occurs.

BIBLIOGRAPHY

1. Psychic disturbances after head injuries, *Amer. Jour. Psychiat.* 91: 155, 1934.
2. Anatomical facts and Clinical Varieties of Traumatic Insanity, *Amer. Jour. Insanity*, 60: 373, 1904.
3. Ferenczi, S.; Abraham, K.; Jones, et. al.: *War Neurosis and Psychoanalysis*, London, International Psycho-Analytical Press, 1921.
4. Etiology of So-Called Schizophrenic Psychosis, Aaron J. Rosanoff, *Amer. Jour. Psychiat.* 91: 247, 1934.

DISCUSSION

Dr. John Lindquist: I have been very much interested in this discussion of mental disorders following head trauma. I must confess that my experience has been somewhat limited, since I see more of the acute cases of head injuries. Nevertheless, we are concerned about the eventual fate of these patients and Dr. Mock has often expressed a hope of studying state hospital patients in an attempt to answer this problem by a careful follow-up. This is difficult to do because these patients get away and our follow-up records are often incomplete. We really do not know what the eventual fate of most of them is. If any advances are to be made, they must come from a study carried out in the state institutions.

There are several things from the standpoint of the general surgeon who deals with acute injuries that interest me. First, in regard to the prognostic features that have been pointed out, particularly the age group. Dr. Goldstein's statistics indicated that the older the patient the less likely there is to be a reversible reaction. We have patients who could be called subacute cases of psychosis or neurosis that seem to improve if we dehydrate them or do spinal drainage,

and I should like to ask Dr. Goldstein if he has had any experience with this management in chronic cases. Fay of Philadelphia feels that there is cerebral ischemia that may be helped by dehydration or spinal drainage.

Dr. Steinberg's remarks regarding the apparent similarity between the prognostic effects of concussion and serious head injury or skull fracture are interesting. There is a tendency among men who treat acute cases to consider concussion as of minor importance and not to give these patients as adequate treatment as those with serious injury. We have felt that in definite signs of concussion the patient should receive the same care as he does with a serious injury. I should like to ask Dr. Steinberg if there is any correlation between adequacy of treatment and the degrees of traumatic psychosis in his study.

I think much is to be gained from pathologic or postmortem study of these patients because in our management we are often puzzled about indications for encephalography or craniotomy on one side or both sides, and there is some divergence of opinion as to when these should be done.

I was interested in seeing Dr. Shapiro's classification: those with pathologic changes in the head and those without pathologic findings.

I feel a great deal is to be gained in this direction and I feel the psychiatrist has to point the way in regard to the prognosis and diagnosis and treatment.

Dr. T. M. French, Chicago: My experience with this type of case is limited so I shall have to make my remarks somewhat general. I should like to compliment the three essayists for these papers which furnish a very nice survey of this field. The paper which lies nearest to my own field is that of Dr. Shapiro. He, as I understand it, divides schizophrenic-like reactions associated with head trauma into two groups: one in which the head trauma acts as a precipitating agent, in which the organic features are less pronounced and in which the previous personality of the patient would suggest that the condition might have developed without the trauma. The other group has organic features which are much more pronounced and there is less reason to suppose that these patients would have developed a schizophrenia without the head trauma; for that reason he regards them as much more specific cases of head trauma with symptom picture of schizophrenia.

This classification seems to be very useful and suggests certain points that I think are worth emphasizing. Dr. Shapiro ended his paper with an appeal that we should study the detailed symptom complex of these patients with reference to the organic and psychic background, and it is that point which I think deserves being emphasized. It seems to me in cases like his second group it is important to realize that even in such cases where there is very definite organic involvement, the symptom-picture or the clinical picture needs to be analyzed, if we want to understand it, into several factors. In the first place, what are the direct effects of organic damage? In most cases there are memory and intelligence defects. Sometimes they are neurological findings probably attributable to actual

damage to the brain. Such symptoms as irritability, headache, confusion and fatigue are probably very largely to be attributed to the direct physiologic effect of the damage. In the second place, even in psychoses due to definite organic damage, there are also very important aspects of the clinical picture due to psychic reactions. The most important of these I would say are psychic reactions to the organic damage itself. There have been some interesting studies made along this line, especially one by Ferenczi on paresis, and it would be interesting to apply the same line of thought to traumatic neuroses. Ferenczi and assistants found that if they carefully examined the content of the delusions of a paretic, a large number of them may be best understood as psychic reactions to the existence of the organic defect. A number of their patients reported their age falsely, giving instead the age at which they had acquired their infection, as they did not wish or admit to themselves the fact that their infection had ever occurred. In other cases the character of the delusions of the grandiose type had to do with some attempt to deny the fact of their infection or to deny the fact of the mental impairment that resulted from it. The delusion that they were treating people for syphilis was an attempt to overcome the trauma of realization that they had acquired this despised and disabling disease and instead of that they were picturing themselves as treating thousands of people with that disease.

I recall a case of my own in which the patient developed a manic depressive-like reaction. This was a case of paresis. During the expansive phase he did not remember his infection, but during his depressive periods he was painfully aware of it. Grotjohn has discussed at some length the juvenile paretic from this point of view, with the emphasis upon the reaction of these young children to the tremendous inferiority and feeling of insecurity that resulted from the fact that they were unable to use their minds as they normally should, and he has made some therapeutic suggestions based upon the principle of trying to minimize the traumatic effect of the realization of the mental defect.

Finally, when the patient is exposed to this tremendous trauma and organic damage and to the psychic shock of being disabled, the type of his reaction will depend not only upon the nature of the damage and not only upon the nature of the psychic trauma at the time, but also upon the structure of his personality. The organic damage and the psychic reaction to it tend to destroy the integration of the personality and one should be able to find a relationship, not necessarily crude and superficial, but a definite relationship between the actual structure of the personality and the type of reaction to the cerebral insult.

Dr. H. H. Goldstein, Chicago: I am sorry to inform Dr. Lundquist that we did not do any significant number of spinal taps on patients admitted with a diagnosis of traumatic psychosis. I doubt whether there would be any significant change since most cases are admitted to the hospital some time after the trauma, at least several weeks, and although it might be in-

teresting to see what the result would be, we have no information as to what would have taken place.

Dr. D. Louis Steinberg, Elgin (in closing): In answer to Dr. Lundquist's question, when we prepared this study we were careful to use only material we were familiar with. The histories as a rule were too inadequate to make any correlation of the patient's present condition with treatment received immediately following the injury. We do get some histories that give adequate information regarding the injury, what was done and the condition of the patient at the time of discharge, but most of the histories were not adequate and consequently we could not correlate the treatment to the outcome.

Dr. Louis B. Shapiro, Elgin (in closing): I think it is important to state that in going over the patients who are in Elgin, many were found who received injuries to other parts of the body who reacted in a schizophrenic-like manner. For our study we chose those cases in which the injury was to the head and of a severe degree. It is quite obvious that many patients of introvert make-up may respond to a trauma from a psychic point of view.

This study is being continued, as suggested by Dr. French. Unfortunately many of these records are inadequate. We are, however, contacting the relatives of patients whose psychosis is causally related to trauma with the purpose of obtaining detailed anamnestic material relative to his personality and his psychic reaction to the trauma.

ACUTE SUPPURATIVE OTITIS MEDIA AND MASTOIDITIS

M. A. GLATT, M. D., F. A. C. S.

CHICAGO

Acute suppurative otitis media and mastoiditis are usually secondary to an infection of the upper respiratory tract by the streptococcus pneumococcus, influenza bacillus and other bacteria. These bacterial infections and the associated systemic diseases, such as scarlet fever, measles, influenza, pneumonia, diphtheria, may often produce variations in the course of the disease.

In order to clearly understand the symptoms, which may arise during the early or late course of the disease, it is advisable to remember that they are the effect of either irritation or destruction of the various structures in or around the temporal bone. Those structures are the mastoid air cells, lateral sinus, dura, labyrinth, facial nerve in the tympanic and mastoid portions; the trigeminal and abducens nerve, bone

Associate Clinical Professor Loyola University. Attending Otolaryngologist Illinois Eye and Ear Infirmary.

marrow and air spaces in the apical portion of the petrous pyramid.

The type of pneumatization of the mastoid process may also be a factor in the variability of the symptoms. The pneumatic type of a mastoid process differs from the diploic type in that its cortex is usually thinner, the air cells are larger, less vascular and have less absorbing abilities. The sclerotic type has an extremely thick cortex and contains few or no cells. Because of their difference in structure these mastoid processes when infected may often present a different clinical course.

SYMPTOMS OF OTITIS MEDIA AND MASTOIDITIS

The infection, as is known, extends to the middle-ear by way of the eustachian tube. The mucosa of the mastoid antrum, being continuous with that of the middle-ear, becomes infected at the same time.

With the exception of the fulminating cases, where a complication arises coincidental with the ear infection, there is usually a period of localization in the middle-ear and in the mastoid antrum.

There is a complaint of earache, mild fever and deafness. This is accompanied by the various progressive changes in the ear drum, such as injection, bulging, loss of luster and landmarks. Further extension of the process may give rise to the following more or less severe and alarming symptoms:

1. The pain may become boring in character and be referred to the entire head. This may be associated with extreme restlessness and loss of sleep. Occasionally, due to irritation of the gasserian ganglion, the pain is felt in the back of the eye, in the face and teeth. While it is an important symptom of petrositis it does not always indicate an involvement of the petrous apex.

2. Tenderness may be elicited at various points of the mastoid process. This is especially true in the pneumatic type of a mastoid process. In infants, due to the incomplete closure of the tympanic ring, an edema may be noticed in front and above the auricle.

3. Fever, usually around 101 and 102; at times, especially in children, may reach 104 and 105, and in diploic mastoids may be associated with chills.

4. Deafness may be extreme by air conduc-

tion. The bone conduction, however, may be increased.

5. Dizziness may be complained of. This is due to absorption of toxic substances by the labyrinth or to pressure on its windows. Nystagmus to the same or the other side may be present. The latter is not to be considered as an invasion of the labyrinth in the presence of good bone conduction. Labyrinth irritation is more often found in the diploic or sclerotic types of mastoid processes.

6. Vomiting may be extreme in nature and, at times, in children is associated with rigidity of the neck. This may be due to the irritation of the dura at the nonobliterated petrosquamous suture, or to irritation of the labyrinth.

7. Facial nerve paralysis may be an early finding. It is due to the pressure on the exposed nerve at an area where there is a dehiscence in the bony canal which protects the nerve in its course through the middle-ear. This anomaly is more often found in the well pneumatized temporal bones.

8. Abducens nerve paralysis may at times occur during the early course of the infection. It does not always signify an actual involvement of the petrous apex.

9. The blood picture shows a leucocytosis with an increase in the polymorphonuclears. A positive blood culture may be found early especially in the diploic type of mastoids. It does not necessarily signify a sinus thrombosis, especially if bacteria other than the streptococcus hemolyticus, or the pneumococcus type III are found.

It is remarkable, that those symptoms may subside, some quickly, some gradually, following the spontaneous rupture or after the incision of the tympanic membrane. What seemingly appears as a case of mastoiditis or of another complication may result in a complete recovery. This is explained by the observation that the symptoms, which may arise in the early course of the disease, may be produced by pressure on the surrounding structures by the congestion of the mucous membrane of the middle-ear or of the mastoid cells, or due to absorption of the toxic products of the bacterial infection. Those symptoms do not necessarily signify an actual destruction of tissues or organs.

When, however, some of the above enumerated symptoms persist or become more severe, or ap-

pear after the establishment of drainage from the middle-ear, then one must be on guard to evaluate each symptom with reference to a threatened complication.

DIAGNOSIS OF SURGICAL MASTOIDITIS

It has been observed that the pneumatic type of a mastoid process breaks down much earlier and oftener than the diploic type and forms a coalescent abscess. It usually takes about three weeks from the onset of the ear infection for such a process to occur. Coincidental with it there is an infiltration of the periosteum of the mastoid process and of the bony auditory canal. This produces more or less bulging of the auricle in a forward and downward direction and sagging of the posterosuperior external canal wall. The latter is almost a constant finding in all types of pneumatized mastoid processes and constitutes a pathognomonic sign of surgical mastoiditis.

Retraction and bulging of the auricle is more often found in the pneumatic type of a mastoid process or when there is a breakdown of the external cortex in either type. Although it is a pathognomonic sign, it may be too dangerous to wait for it to appear.

The roentgenogram, which in the early stages of the infection shows a cloudiness of the cells may not always show the corresponding degree of the actual destruction of the mastoid air cells. It is, therefore, not always dependable. However, when at any period during the infection, it shows progressive evidence of destruction or a coalescence of the mastoid air cells, it supersedes all as a pathognomonic sign in the diagnosis of surgical mastoiditis.

There is not always a cessation of the ear discharge with the onset of the symptoms of surgical mastoiditis. It may be unchanged, improved, or increased in the presence of a complication.

Some of the symptoms, such as mastoid tenderness, fever and chills, headache, vomiting, dizziness, facial or abducens nerve paralysis, may have made their first appearance at this stage: some may have recurred with a greater severity after a period of improvement. Each of those symptoms, alone or combined, are at this period significant of the destructive process which is taking place and, in conjunction with the aforementioned otoscopic and laboratory findings, con-

stitutes a definite indication for the surgical mastoid operation.

Occasionally, because of the presence of the pathognomonic signs of destruction of the air cells in the mastoid process, the indications for the mastoid operation may arise apparently very early, i. e., in the first or second week from the onset of the ear discharge. Those are the cases, where because of the severity of the original disease, there has been a delay in the timely recognition of the ear symptoms. Another contributing factor are certain bacteria, notably the pneumococcus type III which promotes the formation of fibrin and granulation tissue instead of pus. Although it is often destructive in nature, it may at first produce mild symptoms. The ear drum may not show the redness and bulging which accompanies the usual case of acute suppurative otitis media and, therefore, does not rupture, or there may be scanty or no drainage even after a long delayed incision.

There are also instances when the absolute indication for the mastoid operation may arise regardless of the absence of the aforementioned pathognomonic signs. Among those are a group of cases, where sepsis with a positive blood culture of the streptococcus hemolyticus or pneumococcus type III, labyrinth and meningeal irritation, and motor nerve paresis continue with a progressively increasing severity in spite of drainage from the middle-ear.

An ear infection cannot be considered cured unless the general symptoms have subsided, the ear discharge had ceased, the ear drum had healed, and the hearing had returned to within its former level.

The usual duration of the discharge is from one to four weeks. In undernourished individuals it may last up to six weeks. A careful search should be made for any constitutional dyscrasia or for foci of infection in the nose and nasopharynx.

The persistency of the discharge after the removal of local foci of infection is indicative of suppuration of some of the mastoid air cells. Because of its detrimental effect on the hearing and the possibility of its becoming a chronic process it presents a relative indication for the simple mastoid operation.

TREATMENT

An incision of the tympanic membrane should be performed when there is a moderate amount

of bulging, associated with fever, restlessness, pain and impairment of hearing. This is especially important in the exanthematous diseases. Marked bulging, especially, in the flaccid portion of the tympanic membrane with impairment of hearing, even in the absence of severe constitutional symptoms, calls for a liberation of the exudate in the middle-ear.

In this connection I may call your attention to a frequent occurrence of a spontaneous rupture of the ear drum, in less than twenty-four hours, after the first examination of it when it appeared only slightly injected.

This demonstrates the occasional rapidity of the process and the harmlessness of early drainage. Having encountered an instance in the pre-rupture stage, and especially in the presence of one or more constitutional symptoms, one is justified in doing an early incision of the ear drum. In other words, it is the general symptoms and local findings which shall be the guide and not the time element. The exception to this rule is that type of otitis media which is characterized by the formation of hemorrhagic blisters on the ear drum and external canal wall. These may show the hemolytic streptococcus on smear and culture. The administration of sulfanilamide is advisable in these cases. The incision of the ear drum may be delayed for twenty-four hours depending on the signs and symptoms.

The after management consists of the removal of the secretions from the middle-ear and the building up the general resistance of the patient.

The use of mass suction in the treatment of acute suppurative otitis media has no value. While this procedure may have a favorable effect on the chronic discharging ears, in the acute cases, however, such treatment may produce a blocking to secretions and may convert a seemingly mild case into a surgical one. These cases are referred to in the literature as "suction mastoiditis."

It is remarkable how by the use of cotton drains, properly fashioned and frequently replaced, one may remove the secretions. Often, long tenacious plugs of mucopus are found adherent to them.

Irrigation of the ear canal, may be resorted to when there are accumulations of detritus in the external canal which block drainage. There is no proof that this procedure has caused a spread of the infection to the mastoid air cells,

Regarding the use of sulfanilamide, which has been highly acclaimed as a valuable drug in ear infections, I feel that a warning must be given that this drug may often confuse the clinical picture by masking certain symptoms or by giving a false sense of security in converting an active process into a latent form. One must, therefore, use this drug only as an adjunct and not as a substitute for the indicated surgical procedures.

It is not my intention to discuss the details of the technic of the mastoid operation. I only wish to emphasize the importance of adopting a surgical procedure which will exenterate all the accessible air cells around the lateral sinus, dura, labyrinth, zygoma and tip. Thus, numerous instances of complications which may be traced to incomplete surgical procedures will be eliminated.

It is not within the scope of this paper to discuss the complication, known as petrositis. I have only intimated some of the clinical symptoms which may arise when the petrous apex becomes involved in the early stages of the ear infection. Although this area is not explored during the simple mastoid operation, there are instances of petrositis in the experience of others and my own, which have cleared up after a most thorough exenteration of the cells in the simple mastoid operation. One may, therefore, infer that such a thorough procedure may also carry with it an element of prophylaxis in the prevention of petrositis.

The following case report does not represent the usual type of an ear infection, nor an isolated incident. Because of its recent occurrence and its illustration of many points of this presentation, I consider it worth while to cite it.

A white male, aged 28, registered on my service at the Illinois Eye and Ear Infirmary on April 8, 1939, because of his complaint of right side deafness of two months' duration.

He stated that two months previously he had a right side earache which lasted for one week. After a relief of ten days' duration there was an onset of right side facial paralysis. This was followed two days later by an attack of dizziness and vomiting. At that time the deafness was increased to an extreme degree. A diagnosis of Bell's palsy was made by his physician. After a two weeks' rest his condition was improved sufficiently to allow him to resume his usual occupation. He stated that at no time did he notice a discharge from that ear.

At the time of examination the facial nerve paralysis, which was of five weeks' duration, had almost com-

pletely recovered. There was a sustained spontaneous nystagmus by gazing to either side. The ear drum did not present any abnormalities. There was no edema or tenderness over the mastoid process. The tests disclosed a complete loss of cochlear and vestibular function of the right labyrinth.

Because of his apparent good general condition the patient was not hospitalized by the resident. However, blood and roentgen ray studies of the mastoids were ordered and the patient was instructed to return in two days for a report on the findings. He failed to keep his appointment. One week later information was received that four days after his visit to the clinic he became severely ill. He was removed to another hospital where a diagnosis of meningitis was made.

COMMENT

1. This is possibly an instance of an ear infection with the pneumococcus type III, also known as streptococcus mucosus capsulatus. Since there was no rupture of the tympanic membrane and the symptoms were not severe enough, he did not consult a physician.

2. Facial nerve paralysis coming on during the third week of otitis media with persistent deafness should have aroused suspicion that the condition was not a simple Bell's palsy in spite of the lack of a discharging ear. At this period a roentgen ray study of the mastoid would have already shown destructive changes of the cells. The absence of mastoid tenderness could have been explained by the diploic type of cells which it consisted of and its thick cortex.

3. The onset of signs of labyrinth irritation, such as vomiting, dizziness, nystagmus and profound deafness associated with a history of earache were again sufficient reasons, even in the absence of destruction of the mastoid cells, to explore the mastoid process and more so when there was substantiating proof of a destruction of the mastoid air cells, which by April 8, showed a complete coalescence of all cells.

4. One may avoid many pitfalls in practice by keeping constantly in mind that an ear and mastoid infection have variabilities including the symptoms and local findings and that there is always danger when there is no return of function.

SUMMARY AND CONCLUSIONS

In the diagnosis and treatment of acute suppurative otitis media and mastoiditis it is important to consider each anatomic structure of the temporal bone as a factor in the course of the infection. The symptoms which arise may be a manifestation of either toxic reactions, irritation or actual invasion of those structures.

In most instances the pathologic process is characterized by two stages; one, that of congestion and another that of destruction. The first stage may either subside or progress to the other in a slow or a rapid manner. While both stages apparently present similar clinical symptoms, they can nevertheless, be differentiated.

An incision of the tympanic membrane for drainage of the middle-ear infection is indicated whenever the local findings or the general symptoms are severe in nature irrespective of the duration of the infection.

While the time element is an important factor in the progress from a middle-ear infection to a surgical mastoiditis, nevertheless, one should not adopt this as a strict guide. The indication for the simple mastoid operation arises whenever the pathognomonic signs of destruction of the mastoid air cells present themselves, or when the irritation of the vital anatomic structures increase in severity and threatens the invasion of same.

Due consideration should be given to the use of sero- and chemotherapy before the destructive process has set in. Great caution, however, must be exercised in their use when definite surgical indications arise, lest an active process be converted into a dangerously latent form.

It is important, that the surgical procedures should consist of a thorough exenteration of all accessible diseased cells and not be limited to mere drainage of the mastoid antrum. One may thus clear away the infection from many of the preformed pathways and prevent the formation of new pathways for the extension of the infection to the intracranial structures.

55 E. Washington Street.

CLINICAL ROENTGENOGRAPHIC ASPECTS OF PETROSITIS

S. M. MORWITZ, M. D., F. A. C. S.

CHICAGO

Lillie¹ recently wrote "The good that has come from the prominence given in otologic literature to suppuration of the petrous pyramid has risen not from the description of special surgical techniques but from the fact that otologists have become more alert than formerly they were to the recognition of clinical syndromes and that they

¹Read at the annual meeting of the Illinois State Medical Society, Section of Ear, Nose and Throat, Rockford, May 2, 1939.

more clearly understand the pathologic processes that are associated with the condition." Balance made the statement that the petrous bone now occupies somewhat the position which the mastoid occupied 20 or 30 years ago.

In the United States prior to 1930 little was written or known on the pathology, symptoms, diagnosis and therapy of petrous apex suppuration when Kopetzky and Almour began their serial papers on the subject. The diagnosis of this condition was rarely made except at post-mortem. Now otologists and radiologists are on the lookout for this disease entity, for early diagnosis and treatment of this serious pathologic lesion may prevent a fatality. Since operative indications may be questionable every diagnostic aid must be employed.

This paper is an attempt to note what dependent correlation exists between roentgenographic findings in the petrous portion of the temporal bone and clinical symptoms. The otologist is at times confronted with an ear infection either pre- or post-mastoidectomy wherein uncertain sepsis continues and wherein the diagnosis of petrositis enters. When the recognized characteristic symptom complex of petrositis is present the diagnosis may be evident clinically, but even then the otologist is anxious for more definite information to assure his decision. To what extent do radiographic findings add to such assurance?

As early emphasized by Taylor² a complete study of infection in the temporal bone includes proper roentgenographic exposures of this area and its proper interpretation. The petrous pyramid is difficult to study by x-ray because of its depth within the skull and because of variations in its own anatomy. Structurally, the petrous portion of the temporal bone may be pneumatic or diploeic. Either type can be recognized on the roentgenogram. In accordance with Wittmaack's theory if there is no disturbance in the process of pneumatization, a well pneumatized mastoid will result in numerous cases in pneumatization of the petrous portion of the temporal bone. Just as the mastoid process may vary in its structure so may the petrous pyramid and its apex vary. While it is the rule for the mastoid process to be more pneumatic than the petrous pyramid and the apex, nevertheless the reverse condition sometimes exists, that is, the mastoid process is diploeic while the paralabyrinthine

cells and the cells at the apex are pneumatic. At times there may be as few as one or two cells at the apex. Mellinger³ points out that in the interpretation of roentgenograms one must bear in mind the possibility of rather large venous spaces along the carotid canal, which might be mistaken for air cells. Their walls are more irregular in outline than are those of pneumatic cells. Also, the density of osseous tissue increases with age, therefore, one must remember that the bones of children are more transparent than those of adults. These anatomic variations play an important role in the spread of infection from the middle-ear to the apex.

Radiologically, the petrous pyramid in any acute or chronic otitic infection shows a change from the normal. It is known that in the presence of acute otitis media the x-ray film of a pneumatized mastoid process shows a cloudiness. This is due not to an infection in the mastoid process but to congestion and edema of the cell lining membrane which are secondary to and accompany the otitic infection. Likewise the roentgenogram of a pneumatized petrous pyramid in the presence of acute otitis media shows a cloudiness which is due to the congestion and edema of the lining membrane. This is not due to an infection in the pyramid. The petrous area displays a haziness in the presence of acute coalescent or destructive mastoiditis even though there is no extension of the infection into the pyramid. This diminution in aeration is proportionate to the congestion and edema of the membrane lining the air spaces. It is therefore seen that the petrosa shows essentially the same roentgen findings in acute otitis media as in acute coalescent mastoiditis. If suppuration in the petrous apex develops, a marked decrease in density ensues with halisteresis, softening or destruction of trabeculae, and finally a partial or complete loss of apical contour. A striking demarcation between the apex and labyrinthine portion now becomes evident.

Even with stereoscopic technic it is often difficult in the petrosa to separate one shadow from another and to evaluate the density and outline of each. This is partly due to the fact that most of the petrosal pyramid lies rather deep in the skull; and it is almost impossible to obtain a clear picture of its entirety without the superimposition of the shadows of the sinuses, rim of the orbits, or tissues of the neck and cal-

varium. The main difficulty is inherent in the bone itself. The most common type of petrosa is pneumatized only in a few areas. The surrounding bone is more or less densely trabeculated bone containing marrow. The shadow of this sclerotic or diploeic bone as the case may be is superimposed on the few pneumatic cells and if they are small or located in certain areas their shadows may be completely obliterated.

While obliteration of pneumatic cells in the mastoid usually means pathological changes, this does not hold when considering the petrous pyramid. The more highly pneumatized the petrosa the more the problem of estimating these changes approaches that of the mastoid.

Taylor⁴ aptly interprets films with two descriptive phrases (1) an increase in density and (2) a decrease in density. An increase means that a structure appears more white in the roentgenogram. It has gained something. In a pneumatic bone anything that decreases the contact with air produces an increase in density. This may be accomplished by congestion of the mucous membrane, by a transudant or an exudate in the air space, or also by the development of new bone and increase in lime salts. The reverse holds true when a decrease in density is described. Something has been removed, usually calcium and its supporting structure. The area involved appears darker on the film.

By observation of these two changes and correlation of the clinical findings Taylor claims it is possible to diagnose (1) acute coalescent petrositis with inadequate drainage which requires immediate surgical intervention. Here roentgen study shows a diminution in the aeration of the pyramid which is particularly marked in the basal portion. The trabeculae in the apex are thin and decalcified. As the lesion progresses, the halteresisis becomes more marked followed by destructive changes. The decalcification may be so intense that the apex is not visualized in the film. (2) Subacute case of coalescent petrositis, with adequate drainage not requiring immediate operation for drainage of the petrous apex. The same roentgen changes are seen as in acute coalescent petrositis with inadequate drainage but the typical symptom-complex is absent. Otorrhea is present. These cases have a tendency to become chronic. (3) Chronic cases, presenting persistent otorrhea due to an infection in the petrous apex and showing roentgen

evidences of chronic osteitis. There may or may not be complete obliteration of all air cells.

To visualize the petrous pyramid either the Taylor or Stenver methods are employed. The mentovertical or so called Taylor base position is the more popular position for the study of the surgical petrous apex. It has many advantages as Taylor has pointed out, the most important being that it allows an over-all view of both petrous pyramids and therefore a comparison between the two sides. The disadvantage is that the projection superimposes the inferior portions of the petrosa upon the superior angle which is frequently involved. The oblique view or Stenvers position gives a good view of the superior angle but necessitates the taking of two plates for comparison of the two sides. The use of a contrast medium as iodochloral when feasible is of great value. Exact technical factors should be maintained so that subsequent films can be reproduced with the same technic, thereby creating a more exact interpretation of changes.

Because of the complexity and gravity of petrositis it seems advisable in a suspected case to take stereoscopic projections by Taylor's method for comparison of both sides and others by Stenver's method for further localization. Today otologists being petrous-minded are inclined in every mastoid case to request films also of the petrosa as a key picture for later study and comparison should the question of petrositis arise. If on the film taken at the outset there is a shadow of either apex no definite conclusion can be made, but if subsequent base plates show a definite change in this area when compared to the original film, then definite evidence of involvement in this area is present.

Considering the barrage of papers and discussions on the subject of petrous suppuration from 1930 to 1935 there has since been only sporadic articles on this condition, particularly the roentgen value. Sufficient time has now elapsed for various observers to report series of cases, and the findings and conclusions in many of these do not correspond with the earlier observations.

Coates and Ersner⁵ in 1934 reported four cases each of which showed definite roentgenographic evidence of involvement of the apex of the petrous portion of the temporal bone and all recovered without surgery on the apex, just from myringotomy or mastoidectomy. This brings to

our attention the now well recognized opinion that for diagnosis of petrositis x-ray films should never be considered alone but only in conjunction with all other findings. It is apparent that x-ray changes in the petrosa do not necessarily mean operative petrositis any more than x-ray changes in the mastoid necessarily mean operative mastoiditis.

According to Almour⁶ the findings on the x-ray films should be interpreted first, as an individual factor giving information of the status quo, and second in comparison with films previously taken of the same patient, affording information of the moving pathological findings. Where only clouding is present and where halisteresis and cell coalescence is absent, and in successive films this status is maintained, one can expect recession of the lesion providing these findings are in accord with clinical observations. Where some evidence of beginning halisteresis or even localized destruction of bone septa is present, but upon successive plates this has not increased, recession of the lesion can be looked for when this finding is associated with gradual improvement in the clinical picture. By this is meant a lessening in the intensity of the retro-orbital pain, a diminution of the otorrhea, and a marked improvement in all symptoms pertaining to the neighborhood structures that may be involved by a petrosal lesion. Where successive x-ray plates show an increase in halisteresis, septal destruction and coalescence and continuation or aggravation of clinical symptoms a progression of the lesion is to be expected and adequate therapy instituted before the suppurative focus ruptures extrapetrosally.

On the other hand Moorehead and Baker⁷ consider roentgen evidence of value only to confirm the clinical diagnosis. To them it is the least valuable and least reliable of all signs in determining what process is taking place in the pyramid and what is necessary to do for it. Many times films taken in connection with acute mastoiditis show cloudiness of the pyramid without any signs or symptoms accompanying the condition. In cases in which symptoms of petrous involvement have developed, the roentgenogram may show only generalized clouding without apparent destruction of the cellular partitions. They therefore use x-ray films only in a confirmatory way, if other symptoms are present, and disregard their evidence if it does not coin-

cide with the clinical diagnosis. They, however, believe that roentgenograms should be taken stereoscopically with the patient both in the Stenver and Taylor positions. In their cases many of the petrous films were inconclusive or failed to indicate destructive changes in the pyramid in positive operative findings. Of interest in one case roentgenogram of patient's petrosa taken three years after the petrous operation showed no evidence of the previous suppurative process and both sides appear approximately alike on the films despite the extensive neerosis which had taken place.

Williams⁸ in his analysis of 30 cases of petrositis from the Mayo Clinic gives little mention to the value of roentgen pictures, indicating main reliance placed on clinical evidence.

Myerson⁹ concludes that roentgen study in the two positions outlined above, along with combined symptoms, as the most important single guide. Such study frequently furnishes an understanding of the cellular structure of the petrous pyramid which is essential to an understanding of the disease, and also may indicate cellular channels leading from the middle-ear and mastoid cavity toward the apex tip. The greatest number of fistulae are found anterior and posterior to the superior canal, while the next in number are those located in relation to the orifice of the eustachian tube. Fowler¹⁰ attributes the limitations of roengen examination of the petrous pyramid chiefly due to the exceeding difficulty of interpreting the films. Kopetzky¹¹ stated that roentgenograms are the only means by which we can determine the advancement of decalcification. Secondary and subsequent x-rays determine its progress and add diagnostic data.

And so as one reviews the papers of the various otologists who have had rather wide experience with cases of petrositis, one finds conflicting and confusing views in their interpretation of roentgenograms to degree of pathological processes and in diagnosis. In the final analysis proper interpretation of films of the petrosal pyramid in conjunction with clinical symptoms depends on the knowledge and experience of both the otologist and roentgenologist as a cooperative team. Frank cases of petrositis requiring surgery are not commonly encountered by the general otolaryngologist but he should be adequately informed of the possibilities and pitfalls

of roentgen study of the petrosa as an adjunct to the diagnosis of a petrosal lesion. To obtain adequate experience in the interpretation of films of the petrosa by both the otologist and radiologist, a base plate should be taken routinely in all mastoid cases as a key film, and later when more detailed information is wanted then both the Taylor and Stenver positions should be taken and repeated at intervals for study of comparative changes as clinical symptoms warrant. At present few hospitals and institutions have established such a routine procedure. In personal interviews with colleagues associated with large hospitals and institutions in Chicago, it appears that the experience with roentgenograms of the petrous pyramid and with frank operative petrous cases is very limited with most of them. It may be possible that with the promiscuous use of sulphanilamide and neoprontosil in otitic sepsis both by the general physician and otolaryngologist the number of mastoid operations has been greatly reduced and thereby greatly diminished the development of petrous cases.

SUMMARY

1. The petrous pyramid is difficult to study by x-ray because of its depth within the skull and because of variations in its own anatomy.

2. The petrosa shows essentially the same roentgen findings in acute otitis media as in acute coalescent mastoiditis.

3. While obliteration of pneumatic cells in the mastoid indicates pathological manifestations such does not apply in the case of the petrous pyramid.

4. For more detailed information exposures of the petrosa should be made in both the Taylor and Stenvers positions.

5. X-ray evidence of lesions in the petrosa does not necessarily mean operative petrositis.

6. Roentgenogram of the petrous pyramid is of value only if properly interpreted in correlation with existing clinical symptoms; and a definite radiographic diagnosis of petrositis should never be made from one film or in the absence of clinical symptoms.

7. To obtain adequate experience in the interpretation of films of the petrosa by both the otologist and roentgenologist, a base plate should be taken routinely in all mastoid cases as a key film and later when more detailed information is

desired then both the Taylor and Stenver positions should be taken and repeated at intervals for comparative changes should clinical evidence warrant.

8. At present interpretation of roentgenograms of the petrosal pyramid in otitic sepsis is still somewhat confusing to many otologists and roentgenologists, but the experience that will be gained with routine key films together with future improved technic thereby will in time make the x-ray film of the petrosa a more conclusive adjunct to the diagnosis of a petrosal lesion.

BIBLIOGRAPHY

1. Lillie, H. I.: Arch. Otol. 29: 345, 1939.
2. Taylor, H. K.: Arch. Otol. 18: 47, 1933.
3. Mellinger, W. J.: Arch. Otol. 29: 498, 1939.
4. Taylor, H. K.: Arch. Otol. 22: 407, 1935.
5. Coates, G. etc.: Arch. Otol. 20: 615, 1934.
6. Almour, R.: N. Y. State J. Med. 37: 1495, 1937.
7. Moorehead, R. L., Baker, J. P.: Arch. Otol. 28: 499, 1938.
8. Williams, H. L.: Proc. Mayo Clinic Staff 11: 493, 1936.
9. Myerson, C. M.: Arch. Otol. 22: 62, 1935.
10. Fowler, E. P.: Ann. Otol., Rhin. and Laryng. 44: 1056, 1935.
11. Kopetzky, S. J.: Ann. Otol., Rhin. and Laryng. 44: 1140, 1935.

55 E. Washington St.

DISCUSSION

Dr. George T. Jordan, Chicago: I feel that we all agree that this paper of Dr. Glatt's has set forth in a clear and concise manner the involved anatomy, the etiology and symptomatology and diagnosis of this form of ear trouble with which all otologists so frequently meet.

In the treatment, however, are clear cut cases with the classical symptoms which require a simple mastoidectomy and there are equally clear cut cases which do not require this operation. Then there are the puzzling cases over which we worry; should we, or should we not operate?—the patient with the profusely discharging ear, with all the post auricular tenderness, pain in the side of the head, a pronounced white count, a low grade temperature and perhaps a sagging of the posterior superior wall. We watch this patient from morning till night, and from night to morning, and with palliative treatment he makes a complete recovery. Or perhaps he does not make the recovery and in a week the operation is performed, or all symptoms subside, the patient is normal except a discharging ear and six weeks later a mastoidectomy is deemed necessary to prevent the chronic running ear.

Dr. Glatt's discussion on the treatment has clarified some of these points and aids in arriving at a decision as to just when the operation is indicated.

Dr. George J. Musgrave, Chicago: Dr. Glatt's many years of devoted teaching at Loyola University and in his clinic at the Illinois Eye and Ear Infirmary necessarily gives great authority to his pronounce-

ments. There is no question but that his paper is comprehensive.

Dr. Glatt spoke at some length of the indications for incising the membrana tympani during the course of an otitis media. Though I know that in this room there are two of the world's greatest otologists, I venture to offer a suggestion based on my own experience. For many years I have had a certain conception of what is going on in the middle-ear or in any nasal accessory space before a suppurative process can ensue. The first three or four days of an otalgia indicates definitely a vacuum only, not an infection of the painful area, and certainly there is no pus formation at this stage. Therefore, our entire attention should be concentrated on overcoming the nasopharyngeal congestion and removing, if necessary, the mucopurulent secretion blocking the throat end of the eustachian tube. This should be done regardless of the exact pathology active in the upper respiratory tract. If these procedures prove unsuccessful, then I resort to tubal inflation by the Dench method. Even after pus formation, a satisfactory result is often obtained by establishing drainage through this natural pathway. Many times this plan of treatment obviates the necessity for incision and later major surgery.

The foregoing is offered merely as a suggestion in the treatment, not as a criticism of indicated incision of the drum membrane.

Dr. Gerhard Danelius, Chicago: I wish to limit the scope of my discussion strictly to one problem.

In publications on petrositis, the great majority of roentgenologic illustrations are pictures of adults, while all of us know that the disease affects most frequently young children. The truth is that the taking of satisfactory films of the petrous bone in children is difficult and time consuming. You will greatly help your roentgenologist in prescribing for the x-ray examination a strong sedative (a sufficient dose of sodium amytal—better avertine). The possible damage of a sedative to the infant will be less than the damage of an exhausting fight of twenty to thirty minutes' duration of your little patient with the personnel in the x-ray room.

What roentgenologic technic should be used for a key plate of the os petrosum? It is my opinion that the ideal projection is still the original Stenvers view. This gives the anatomic landmarks undistorted, in the clearest and most logical fashion and gives a survey over some of the possible routes of propagation of the infection.

The Stenvers technic has two disadvantages: (1) We need separate pictures for each side. (2) While the examination can be well made on a cooperative adult, on very young and excited children it is very difficult to get a set of two well comparable views.

The base-view has been given preference in many institutions since the epochal publications of Taylor. As much as we are indebted to Taylor for his great contribution in making us "petrositis-conscious," I feel that an honest discussion as to whether the Taylor view is actually an ideal projection for a key plate is now justified. This question has been raised in recent

publications and discussions. The posture with the maximum posterior bending of the skull is most inconvenient for the patient, and on individuals with a short neck the results are unsatisfactory. The Taylor view has the advantage that both petrosae are shown undistorted and on one exposure. The anatomic landmarks, however, are not as clear and well defined as on the Stenvers view, important structures are superimposed upon each other and the important upper pyramidal ridge is not visualized at all. The varying extent of the pharyngeal air space may occasionally overlap and simulate a decalcification of one petrous apex.

I wish to present two other views which I consider very useful for key-plates and which have to a certain degree been neglected. One is known as the "exaggerated base view." The roentgenologic technic is simple, both pyramids are visualized in one film, moderately distorted, but giving a clear visualization of the upper petrous border down to the tip. While anatomic relations and structural details are not as well presented as on the Stenvers view, I feel that it still has value where the Taylor view was not satisfactory.

The other technic I wish to recommend as particularly useful in children is based on the old principle of projecting the petrous pyramids into the orbital spaces, and was first used by Schueller. This view, I feel, should not have been discarded in favor of the Taylor view. Its technic is very simple and agreeable to the patient who is placed comfortably on his back; we obtain routinely good films even on very young and very unruly children. The anteroposterior direction is used because the natural posture with the face up makes children unapprehensive and easy to manage. Moreover, according to the laws of roentgenologic projection this will enlarge the orbits in relation to the pyramids which is further aided in shortening the target-film distance to 25 to 28 inches.

The view demonstrates both petrosae on one film, with the clear outlining of the upper pyramidal ridges, perilymphatic cells, inner auricular canals and semicircular ducts. The only disadvantages are the moderate degree of fore-shortening and the fact that the innermost portion of the tip is occasionally not visualized without superimposition. The picture, however, is unobstructed to a point medial from the internal auricular canal. Upon views taken for comparison in the Taylor and in the just mentioned anteroposterior intraorbital projection, the latter gave distinctly better details and clearer anatomic landmarks.

Summarizing, I would like to state that in institutions where for thorough and conscientious study of the petrositis problem key-plates are routinely taken, the projections developed from Stenvers technic (Stenvers, Arcelin, Loew-Beer, and others) should be made whenever possible. These films will give information superior to all other projections particularly when stereoscopic technic is used.

In young children and patients who are unable to cooperate, a view projecting the petrous pyramids into the orbital cavities will give more information as to

anatomic landmarks and bone details than the Taylor view of the base which is commonly used.

When true petrositis has developed, all different projections should be used, combined, will give the best possible information.

Dr. H. L. Ford, Champaign, Illinois: It seems to me that both these papers are excellent presentations. Dr. Glatt's paper dealt at length with histologic pathologic changes in the mastoid structure, and I think he brought out further the probable changes occurring in the sclerotic type of mastoid with its increased blood supply of the epitympanum and the large celled pneumatic type with its poorer blood supply.

His case report is very interesting, as an example of the much dreaded "mucosus otitis." The patient experiences a sticky pain in the ear, a scanty discharge follows myringotomy or spontaneous perforation, but the *hearing* stays markedly depressed. The patient may go for several months conscious only of an "organ feeling" and poor hearing. Such a history, and especially cultures *early*, should lead us to study all such cases with the x-ray, as with the pictures we can spot destruction early and avoid the fatal complications which pneumococcus type three is prone to produce. They are asymptomatic—much like the diabetic cases.

One other point relative to catheter inflation: Kopetsky differentiates between facultative and obligatory aerobes—streptococcus pyogenes being an example of the latter. It may therefore be true, that in some cases, ventilation serves a definite purpose.

Dr. Morwitz's paper on roentgenographic aspects of petrositis, I thought was very good. I am wondering why, however, he did not mention the frontal view—the projection of the petrosa into the orbits. It is much easier to take. There is less superimposition of structures, and it reveals the *superior* petrosal margin more clearly and this is where probably the greater number of perforations take place. I have followed the technique of McMillan, of the Massachusetts Ear Infirmary—postero-anterior with nose and forehead down—plate horizontal and another anteroposterior, a reverse frontal position with chin in and plate elevated 23 degrees. This latter position is used especially for children, but throws the petrosa higher.

The otologist owes it to the patient and to himself to familiarize himself with the x-ray findings. Limitations of petrosal films should be realized, and venous spaces should not be confused with pneumatic spaces. It is important, as Dr. Morwitz has mentioned, to take an initial "key" picture and then subsequent and repeated pictures and views, using the same *technical* factors. I feel you cannot get too many pictures if you are in doubt in a particular case.

Dr. Joseph C. Beck, Chicago: I have talked so much in my day that I thought I would escape this time, but now that they have honored me by calling upon me, I am glad to pay compliments to the authors and discussers who have covered this subject so well. I listened to see if I could pick up some points to discuss, but they covered the subject so well that there is really very little to say. I would like to emphasize the functional tests. That is what the ear is for,

namely, hearing, although some people seem to feel that they are to be pinned back. They are also for hearing and not for mastoid operations which have come into vogue since operators have become so efficient. Many are operated upon when the indications are not 100 per cent. However, the hearing is the important thing. Dr. Glatt emphasized the importance of tests in the adult. That is one thing but in children it is more difficult. Dr. Morwitz did not dwell upon some of the roentgenologic demonstrations. We, at the Mount Sinai Hospital, feel that we are very fortunate in having coworkers who will sit down with us and compare the changes that are going on in these mastoids and petrosae, and that is an important factor which many men in smaller cities do not have an opportunity of doing. It is really wonderful what an x-ray man can read into the picture by his experience and opportunity to study the plates.

Nothing was mentioned about drugs, that is, that drugs are or may be a masker of symptoms. In this past season of mastoid flurries I have seen cases in my own practice and in consultation where that has taken place. The doctor congratulates himself upon the fact that the child is fine and an operation has been avoided, but when you test the hearing you will find it is bad—the drum looked alright, but suddenly the patient developed meningitis. The value of this wonderful drug sulfanilamide has, as yet, not been definitely proven. How good or how bad it is we do not know, but I have seen these results and I want to state them as facts.

The gentlemen who opened the discussions are all of the right age in otology, and they brought out some excellent points—one truth in particular, that there is an individual to be considered in each case. We cannot make any uniformity of rule, but we can go away from this place very much benefited by this discussion, and I am pleased to have been here.

Dr. M. A. Glatt, Chicago (closing): I wish to thank all the discussers. I thought, at first, that this was rather an elementary subject and presented it with some hesitancy, but I now realize that some of the old timers feel that there are still many points needing clarification and discussion. I want to emphasize that all my patients, whether in private practice or those on my service at the Illinois Eye and Ear Infirmary, are always studied from an angle of any possible existing or of a latent form complication and more so when a simple or a radical mastoid operation is contemplated. While the patient, whose history I have cited, was in the clinic for possibly 15 minutes, sufficient studies were carried out by my associates to make a tentative diagnosis of a serious lesion but, regrettably, they were not alert enough to immediately hospitalize him.

Some of you may still recollect the old time treatment of an ice-bag to an infected ear. A number of those patients developed surgical mastoiditis and the otolaryngologist was blamed for faulty treatment. Nevertheless, there are some who still adhere to this practice. With reference to Dr. Musgrave's remarks, I wish to state that most of these patients, whether

children or adults, are under the care of either the general practitioner or pediatrician and receive the usual care of the nasopharynx and it is to them that this discussion is directed. It is true that a number with otitis media recover without incising of the ear drum and, I am sure, there are many instances where inflation has been beneficial. On the other hand, there are numerous instances where a surgical mastoiditis developed after inflation. Here again an explanation must be given to the patient that the treatment was not the factor in producing it. It is therefore, in our difficulty—proper interpretation of films as to whether it is a surgical petrositis or a medical petrositis—to be cautious with this method of treatment. There are many other claims by advocates for certain methods of treatments, but when all facts are analysed it is evident that there are many variabilities, to some of which I have called attention in this paper that have a bearing on the final result. I may again repeat that it is important to bear in mind that besides the disappearance of all symptoms, an ear infection cannot be considered cured and out of danger when the function has not returned to its former level.

Dr. S. M. Morwitz, Chicago (closing): The main objective of my paper was to emphasize the importance of cooperation between the otologist and the roentgenologist. Although actual surgical petrositis cases are not common, we are often confronted with the question of whether it is in the mastoid or labyrinth or petrous process, and I think that only by proper cooperation can we get more experience in interpreting films of these regions. Rotentgenographically, I think that is situs.

INTERDEPENDENCE OF A PUBLIC CHILD HEALTH PROGRAM TO THE PRACTICE OF OBSTETRICS AND PEDIATRICS

ELIZABETH B. BALL, M. D.

Pediatrician Division of Child Hygiene State Department of
Public Health

SPRINGFIELD, ILL.

Since health programs flourish only as the result of coordinated effort, we appreciate the opportunity to discuss this subject before this group. Many of you have given evidence of a sincere desire to bring about a better understanding and better cooperation between the Health Department and organized medicine and the educational authorities.

A few years ago we talked about the interest we had in the health and life of our children—today the word interest has changed to obligation—so the obligation we have to promote the

health and welfare of children is discussed. The obligation has been impelled by many considerations.

1. Excessive maternal and neonatal mortality.
2. Records of the high percentage of remedial physical defects existing among children of all ages.
3. High mortality and morbidity rate from communicable diseases, many of them preventable.
4. Low vaccinal and immunizational status in diphtheria, smallpox, scarlet fever, whooping cough, typhoid fever, etc.
5. Retardation and absenteeism in the schools resulting from illness much of it unnecessary.
6. Failure of the health habit era to make the child desire health.
7. Bodily inefficiency as a result of poor nutrition—faulty food habits, overactivity, insufficient amount of rest.

8. Slow decrease in defects of the mouth and teeth.

9. Tuberculosis statistics, especially here in Illinois where there are no State sanatoria and the policy has been to localize almost entirely the burden of official anti-tuberculosis work. Since 1932 the annual mortality rate from tuberculosis has declined 23.5% in Massachusetts; 15.4% in Pennsylvania; 11.4% in New York; and 8.3% in Illinois.

These and many other conditions that might be mentioned caused an intelligent society to reinforce childhood life and set it in new currents. We are a people who glory in a standard of culture equal to the strain of a diversity of opinion on many subjects but here is a subject in which we are a unit.

The obligation is further impelled by the custodial situation in our state. On April 1 this year there was the following child and juvenile population in the custodial institutions of Illinois.

	1939	1920
Lincoln State School and Colony.....	4,051	2,024
Dixon State Hospital	3,672	299
Illinois School for the Blind.....	237	215
Illinois School for the Deaf.....	529	359
Illinois Eye and Ear Infirmary.....	94	115
Illinois Soldiers' and Sailors Children's School.	616	333
St. Charles School for Boys	623	851
State Training Schools for Girls.....	316	449

At Lincoln, Dixon and the Eye and Ear Infirmary there are both children and adults. There are some students at both the schools for the deaf and the blind beyond the age of twenty-one

Read before Joint Session of Sections on Pediatrics, Obstetrics and Gynecology of Illinois State Medical Society, May 2, 1939, Rockford.

years. But what does this population represent? It is first of all an effort to discharge the obligation of the state to provide living conditions for children who cannot be cared for adequately in any home because of the peculiar nature of their maladies. It represents also the effort of the state to salvage as many as possible to some degree of help and of responsible citizenship. Furthermore, it is a series of laboratories, sociological and medical, in which may be worked out at no risk or cost to these children and only for their benefit some of the problems of care and improvement of such cases, and lastly, the most responsible and efficient custodians of these institutions will heartily agree that they represent in part the failure of society to prevent much of the dependency and delinquency found here, which in turn frequently bears a relation to poor physical conditions.

Go over the etiology of the maladies of many of these children and you have a mixed sociologic, psychopathic and histologic pathology. But all too frequently comes out of it the horrid results of the loathsome venereal diseases, of malnutrition, of trachoma, of birth palsy, of psychopathic heredity, of tuberculosis, and undiscovered or uncorrected physical defects. This brief mention includes predominantly causes which are preventable.

In order to assist in solving the problems as well as to extend and improve the maternal and child health services in Illinois, the State Department of Public Health during the past 20 years, especially through the personnel of its Division of Child Hygiene and Public Health Nursing (physicians, nurses, nutritionists), has carried out an official child health program, an outline of which is here presented.

Away back when

1. We had the Better Babies Conference which though somewhat crude and very general in scope, nevertheless provided a nucleus for some phases of the present set-up. In self-defense fond parents consulted the family physician about little Katy's anthropologic irregularities.

2. The Crippled Children's Clinic where we saw not only deformities of the body but defects of vision, hearing, etc., as well as problems in nutrition and mental hygiene.

District Supervising Nurses

About this time the state was divided into dis-

tricts with a qualified public health nurse supervising a number of counties. The function of each district supervising nurse is to know the health needs of each community within her district; to confer with the local physicians, dentists, school authorities and other leaders relative to these needs, and plan suitable programs with them. They are active in promoting and assisting in immunization programs with emphasis on the importance of protecting the infant and preschool child. Through the schools the nurses promote new nursing service, assist doctors with medical examination of children and summer round-up programs. They plan for the general promotion and extension of the Maternity and Child Hygiene Nursing Service. This planning and work on the part of the supervising nurses creates a demand for the services of other members of the staff.

3. Infant Mortality Surveys

One which I made in 1925 in nine counties of the state mostly in Southern Illinois with a mortality rate of over 100 for infants under one year of age. The two outstanding causes of death as elicited from death certificates and interviews with physicians were found to be syphilis and prematurity.

4. Breast Feeding Demonstrations

In this connection we quote from a report by one of the local physicians: "A Breast Feeding Demonstration may be made a valuable public health work from the educational standpoint and is instructive both to the medical profession and the community at large."

5. *Organization of Mothers' Study Clubs* covering prenatal and infant care.

6. *Talks* on preventive medicine and demonstrations to civic organizations and educational groups.

7. *Stimulation* of interest in hygiene of the preschool child.

8. *Educational* campaigns on diphtheria and typhoid immunization and smallpox vaccination.

9. *Child Health Day and Health Promotion Week.*

10. *Control* of milk and water supply.

11. *Maternity* and social hygiene institutes for nurses throughout the state.

12. *Schools* of health instruction for members of the Federated Women's Clubs in order to interest them in personal, family, and com-

munity health and assist in formation of suitable local programs.

13. *Medical School Inspection*

The Division personnel assisted local physicians with the physical examination of thousands of children of all ages. Parents were present to witness the examination and discuss the findings with the doctor.

14. *School Health Appraisals*

Many schools requested a personal study of their school plant; the medical and dental service program, immunization and nursing service.

Literature

Health Messenger—official organ of the Department. Most of the pamphlets, booklets, prenatal letters, etc., were and are made up of manuscripts written or approved by obstetricians and pediatricians in the state.

Films, slides, posters and the radio all played a part in this stupendous effort to make the public health movement felt and heard throughout Illinois.

But Time Marches On

In February, 1936, funds for Maternal and Child Health Services became available under the Social Security Act.

The responsibility for developing and submitting a plan of activities devolved upon the State Department of Health where it rightfully belonged since the needs of the people in various sections of the state differ in many respects because of special geographic, racial, agricultural, industrial or educational conditions. The state has this data and should know about what type of program can be carried out successfully in the various localities and communities.

Most of this work has been planned for rural areas because of the need and also because of the fact that the Federal Act makes it clear that the grants are intended to extend and improve conditions primarily for mothers and children living in rural areas or areas of economic distress.

During the past three years the bond of relationship between the Department and the practice of obstetrics and pediatrics has been rather definitely outlined through the appointment of state advisory committees in maternal and child hygiene, and also through the recommendations

of the Academy of Pediatrics. Every county in the state has a maternity hygiene committee consisting of local physicians.

The two obstetricians on the Staff of the Division of Child Hygiene have met with the County Medical Societies in the state and have addressed many lay groups. Twenty-three talks have been given so far this year by one of these obstetricians.

Postgraduate courses in obstetrics and pediatrics have been given at the University of Illinois for physicians in the state in 1937 and 1938 with an attendance of over 300. These courses are to be repeated this summer. The material presented covers the common problems encountered by the general practitioner.

During 1937, 1938, and up to the present month, 1939, obstetricians and pediatricians in the state have given 256 talks, 134 in obstetrics and 122 in pediatrics, to medical groups.

Public health nurses were urged to start staff educational programs to improve the quality of nursing service rendered to maternity and infant cases. Many organizations have developed better health teaching methods and are using community resources to better advantage.

Further Activities

Joint nursing service in operation in 21 counties. Fifty per cent. of nurse's salary and travel expense is met by the state and fifty per cent. by the county. A generalized program is carried on with special emphasis on maternity and infancy work.

Assistance to Cities

Nurses are assigned to Visiting Nurse Associations in some five or six of the cities for the extension and improvement in their maternal and child health service.

Maternity Institutes

In 1938, an able instructor from the Maternity Center Association, New York, conducted eight maternity institutes in Illinois for nurses with an attendance of 437. This large registration is most gratifying since it was voluntary and certainly demonstrates an earnest desire on the part of this group to secure a review of basic theory, skills and techniques.

Field Visits

One hundred and ninety field visits were made with nurses doing maternity and infancy nursing.

Nursing services were given to Well Baby Conferences. Where such a conference was being planned, help was given in organization. Survey suggestions were made, also how to make health examinations available for children, and the type of service to be rendered. Procedures for conducting the conferences were approved by the Medical Advisory Committee.

Delivery Service

A delivery service using private duty nurses was developed in four counties—Fulton, Greene, Hancock, Massac—under the auspices of the County Medical Society cooperating with the Division of Child Hygiene. The purpose is to give trained assistance in home deliveries to the doctor where social or medical findings indicate that nursing assistance is needed and cannot otherwise be secured. *Maternity Demonstration* service developed in five counties—Hancock, Greene, Ford, Fulton, and Vermilion. These counties were chosen because of interest on the part of the county medical group, above average maternal and infant death rate, and also because they were typical needy rural areas with many home deliveries and inadequate hospital facilities. The Medical Advisory Committee assisted the nurse in planning her program.

Cases actively registered for maternity and child health supervision:

	Cases Registered	Home Visits Made
Hancock County	598	1137
Greene County	249	718
Ford County	692	1894
Fulton County	285	660
Vermilion County	just started	...
Total in 4 counties	1824	4409

Programs have been developed especially throughout the southern part of the state for improving the care of premature babies. Several improvised incubators are in operation. All hospitals discharging premature infants are being asked to see that these babies have nursing supervision at home. Further, hospitals that lack facilities for the care of the premature infant have been encouraged to improvise and add suitable equipment when the same seems feasible.

Before leaving the subject of maternity hygiene, I should like to call your attention to *Mortality Trends*.

The last thirty years witnessed remarkable progress in making childbirth safer in Illinois.

The risk of puerperal septicemia, or childbed fever, for example, is now but a fraction of what it was three decades ago. From a rate of 8.9 in 1918 to 3.3 in 1938, or about one-third fewer mothers dying during the year just past, shows marked improvement.

Infant mortality decline is most significant when we consider that the rate in 1918 was 102.4 and in 1938 was 41. Further, the rate in 1934 was 52.2, so in four years we have saved the lives of nearly 1,000 infants.

The improvement in the infant and maternal death rate is undoubtedly due in no small measure to the expansion and intensification of public health services. There can be no doubt that programs in maternity and child hygiene have been responsible for the improvement where progress has been observed.

In this same period the birth rate dropped from 20.1 to 14.6 in 1937 and went up to 15.4 in 1938 which is the highest rate since 1931. (See graphs and charts in Illinois Department of Public Health Exhibit).

Immunization Program

Also in Southern Illinois nurses assisted local doctors with about 8,000 typhoid immunizations, 3,000 vaccinations for smallpox, 4,000 diphtheria immunizations, more than 1,000 tuberculin tests and about 1800 Schiek Tests.

Social Hygiene and Parent Education Program is now well established as an integral part of the services of the Division of Child Hygiene and Public Health Nursing. The program for the year was planned with four objectives in mind:

1. Continuing services to significant special groups and communities already reached in an earlier program.
2. Initial programs in new communities with particular emphasis on small rural groups in the area affected by the flood of 1937.
3. Continued development of adult education through service to parents, teachers and civic groups to the end that local communities be encouraged to promote a continuing community social hygiene program.
4. Stimulation of public opinion in this field through individual and group study made possible by the availability of more adequate library service.

Syphilis Control Program

In connection with the work in social hygiene, may I refer to the syphilis control program for a small city which is in effect at the present time in the Champaign-Urbana Health District. Briefly outlined, the plan approved by the State Department of Public Health and the local physicians makes it possible:

1. For all cases of infectious syphilis to be treated in the private office of physicians selected by the patient.

2. The physicians are paid for all treatments, either the regular fee by the patient, or they receive from local funds payment at the rate agreed upon.

3. A complete follow-up system is established for all cases.

4. A defined minimum standard of treatment is established for all cases which it would seem should effectively control infectious syphilis, as well as prevent the development of late syphilitic manifestation in the great majority of cases.

5. A committee of representative physicians is established as the official control unit of the Board of Health in this district.

Nutrition

During 1937 one nutritionist was assigned to Southern Illinois. Her program included individual family consultations as requested by the doctors and the nurses, lectures to lay groups, talks in schools and work coordinated with Home and Farm Bureaus.

For the most part, the plan of work for the other nutritionist consisted of consultant service to staff nurses, schools, school cafeteria and lunch-room managers.

Talks on nutrition were given to groups of mothers, teachers, nurses and school pupils.

The work of the nutritionists makes us realize that the nutritional defects of children are due not so much in our state to a lack of food but to an unbalanced diet. "What to eat" is more than a cook's question as she considers the palates and appetites of her family. "What to eat" is a question to be answered for millions of children who without its answer must suffer some form of deprivation disease not measurable merely in terms pathological and physiological but in terms of efficiency and happiness. And this is a problem which can be met with an ade-

quate expenditure in education in schools, in homes, in doctors' offices and health centers.

Conclusion

Throughout the years the Division of Child Hygiene and Public Health Nursing has had the finest cooperation from organized medicine, from County Medical Societies and from doctors everywhere throughout the state.

The important policies and programs have been worked out with the Educational Committee of the Illinois State Medical Society.

For years the medical staff of the Division have given very few inoculations for diphtheria or smallpox, preferring to leave this work for local physicians.

In the new Federal program the Department has met with the cooperation of the Academy of Pediatrics, the County Medical Societies and the obstetricians.

Unfortunately, there are those who think of the physicians in the Department as purveyors of State Medicine. This is most unjust as there is not a group of people anywhere who are in a position to so fully appreciate what the family physician is doing and can do for the people in his community.

Let us continue to work together. We have help for you and you have help for us. What concerns us concerns you and what concerns you concerns us. Let us know your needs according to our special services and help us to fulfill our functions so that there may live in the soul of the state the words of Mrs. Browning:

"Do you hear the children weeping, O my brothers,

Ere the sorrow comes with years."

For we know

"That the child's sob in the silence curses deeper
Than the strong man in his wrath."

DISCUSSION

Dr. Charles Newberger, Chicago: The facts brought out in Dr. Ball's paper, so far as puerperal sepsis is concerned, leads me to bring this to your attention: Statistics show that in 1928 the maternal death rate in Chicago was 56 in 10,000; last year there were 27 in 10,000. Undoubtedly it is the result of such work as done by the Department of Child Hygiene and the Maternal Welfare Committees and the harder work of obstetrical staffs in the hospitals that has brought this about.

Dr. G. F. Munns, Winnetka: I think we should be grateful to Dr. Ball for this very good description of the activities of this department. I have had occasion

to work with them this year and know how cooperative and fine they are in every way in helping us put across our project, and we appreciate it a great deal. I think that the work in the State Department will keep on increasing during the next years. As their function seems to be chiefly educational it is something we can back to our fullest energy.

I wish to thank Dr. Ball again for letting us see in a very comprehensive way all the activities that take place in the state for the care of children and mothers.

Dr. Gerald Cline, Bloomington: Downstate we all agree that our close cooperation with the Health Department has been a great help to us. Personally it has been a great privilege to have such people back of us.

Dr. Clifford Grulee, Evanston: I have worked on this problem for many years and the thing that has struck me has been the absolute cooperation between the Health Department, the State Medical Society and the special groups. I must confess that in the early years I was very surprised at this because I had heard so much about friction. So far as I can see there has been very little friction. I think, though, that many of us who have been at this work a long time realize better than others who take it up now that it was a long pull. It is not a question of getting something done so much as a question of getting people to know that it should be done and how it should be done. In other words, if we were a totalitarian state it would be possible to choke down all the thoughts and ideas we have had which under our ways of life I think would be a grave mistake. I think we should go ahead as we have, and that is in the gradual accumulation of our own knowledge and carrying this over to the people in the state. There is no question in my mind that the ultimate solution of public health is the private physician; I do not see how it can be otherwise, and I very much hope that the private physician will take this into his own hands as he has the possibility of doing and not allow the government to do it. That is how all the public health people that I have talked to feel, from those in Washington on down, and I have talked to most of them. We feel that the thing lies in the hands of the practicing physician and it is up to him to take the plow and break the furrow.

PREGNANCY IN DOUBLE UTERUS

MAURICE P. ROGERS, M. D.

AND

BERGET H. BLOCKSOM, JR., M. D.

ROCKFORD, ILLINOIS

The entire question of the etiology of congenital malformations has long been an intriguing subject for the biologist, and various causes have been ascribed for the occurrence of congenital defects. Why the germ plasm should fail to develop in such a manner as to permit failures of fusion such as cleft palate, spina bifida, or double uterus, has yet to be definitely proven,

although two general hypotheses might be found tenable:

1. Inherent defects in the germ plasm.
2. Unfavorable environment.

Unquestionably some ova are inadequate at the time of fertilization, as is shown by the studies of Huber and Kellicott, and anomalies may have their origin in the primary division of the ovum. The development of a grossly imperfect ovum is fortunately terminated by the failure of the fetus to develop to maturity, with a resultant miscarriage or premature delivery of the still-born, malformed fetus.

Stockard and Hertwig have shown that slight variation in the chemical constituents of the medium surrounding fish embryos, leads to the production of cyclopia in half of the embryos, provided the change in environment was brought about immediately after fertilization, while if this change were delayed for fifteen hours, the eyes developed normally.

The uterus, fallopian tubes and upper portion of the vagina develop from the Müllerian ducts. The first evidence of the appearance of these ducts is seen in embryos ten millimeters in length, approximately one month old, and they first consist of a thickening of the epithelium of the urogenital fold. They first make their appearance in the third thoracic segment, and migrate and lengthen in their descent toward the pelvis. Shortly a lumen appears in each of the Müllerian bodies, with a fusion which begins at the caudal extremity to form the uterovaginal canal. The Müllerian bodies are originally apposed by their outer surfaces, resulting in a double canal. An absorption of the septum between the two cavities then normally occurs. From this point on, a rapid differentiation in sex is apparent. In the female the fused Müllerian bodies continue to develop and migrate, until the uterovaginal canal assumes its normal relationship. A failure of the Müllerian bodies to contact each other during the development of the fetus, results in almost a complete loss of both, usually with a failure to find in the fetus even a rudimentary uterine body. If this is regarded as one extreme, the slight dimpling or notching which is occasionally seen in the middle of the uterine fundus probably represents the other. In between these two lie a large number of interesting anomalies with which the practitioner is often called upon to deal. Anomalies



Fig. 1. Double uterus, demonstrated by injection of iodized oil in uterine cavities. (Author's Case)

in fusion of the Müllerian bodies are frequently associated with improper or incomplete migration of the hindgut, resulting in rectovaginal fistula, or vulvovaginal anus. It is our wish to report such a case.

CASE REPORT

Mrs. L. W., aged twenty-one, presented herself for examination on April 12, 1938. Her family history was noncontributory. Her present history revealed that she had been married on December 25, 1937, and that her last menstrual period was in January, 1938. She complained of shortness of breath and a consciousness of abnormal cardiac activity, but said she had never had dependent edema, orthopnea, or other evidence of acute cardiac decompensation. She stated that she had been born with an imperforate anus, two vaginas, and two wombs, and that at eighteen months of age some type of operation had been performed for relief of the condition. She had been markedly constipated all her life, and had taken three cascara tablets or their equivalent nightly, often without results. She had at times gone as long as two weeks without a bowel movement. Her vision had always been weak, and her eyes were correctable only to 20/70. She was subject to recurrent attacks of tonsillitis. Her urinary history was negative and she had never had rheumatism, chorea or scarlet fever.

Physical examination revealed a rather poorly developed, undernourished white female. Her pupils were equal, regular, and reacted to light and accommodation; her ocular fundi were normal; ears, throat, cervical glands and lungs were negative; the left heart border was well within the mammary line, and on auscultation a blowing, presystolic murmur

was heard over the pulmonic area and transmitted over the entire chest. Examination of the abdomen revealed no masses or areas of rigidity. In the perineum there was a slight dimpling of the cutaneous tissue at the normal site of the anus. The external genitalia appeared normal. One centimeter inside the vaginal orifice there was an opening one and one-half centimeters in diameter, which proved to be the rectal opening, the mucosa of which was continuous with that of the vagina. Slightly higher in the vagina a firm septum was encountered, running perpendicularly from the anterior to the posterior wall, and terminating in normal appearing fornices. Located in either vault was a cervix with a short portio vaginalis, each with an apparent normal os. Bimanual examination revealed a double uterus, both of which were enlarged, the right being approximately four times normal size.

A diagnosis of pregnancy in a didelphic uterus, rectovaginal fistula, and congenital heart disease was made. The course of her pregnancy was not remarkable, except for the development of a low grade secondary anemia and a rather marked hypotension, her systolic pressure going down to seventy, with a diastolic of forty. An x-ray which was taken September 6, 1938, demonstrated a fetus of approximately seven and one-half months, lying entirely in the right side of the abdomen, with a vertex presentation. On October 23, 1938, the patient began to experience intermittent abdominal pain and there was a slight vaginal discharge. Because of her cardiac condition, abdominal delivery was decided upon. The abdomen was opened and the presence of a double uterus confirmed. The left fundus was approximately three times the size of a normal uterus. The corpus luteum was discovered in the right ovary. A full term, living male child was delivered by the classical method. Pituitrin introduced into the uterus produced firm contraction of the gravid fundus, but had no apparent effect on the non-pregnant side. The patient made an uneventful recovery. Examination of the baby failed to elicit the presence of any congenital defect.

On the occasion of her final postpartum examination, iodized oil was introduced by cannula into both uterine fundi, and x-ray studies were made of the relationship of the two uterine cavities.

Reconstruction of the rectal canal, with a closure of the rectovaginal fistula is contemplated at a future date.

303 North Main Street.

PSYCHOSES IN CHILDREN

EUGENE I. FALSTEIN, M.D.

CHICAGO

The Institute for Juvenile Research examines by appointment some 1,000 children a year at

From the Institute for Juvenile Research, Paul L. Schroeder, M. D., Director, and the Department of Nervous and Mental Diseases, Northwestern University.

Read before Physicians Association Illinois State Medical Society, Rockford, May 2, 1939.

the headquarters clinic, in addition to the many hundreds seen at the Juvenile Court branch and the various community branch clinics throughout the state. There pass through its diagnostic and admissions service, however, many cases, emergency and otherwise, which are of necessity rejected or referred to other agencies and clinics after the presenting problem has been thoroughly evaluated. In this latter group of cases are to be found many of the young psychotics with whom this paper is concerned, and I am presenting a review of this material as it has passed through the admissions service from January 1, 1938, to January 1, 1939.

Psychotic children represent a very small percentage of our state hospital population and this is especially true of the prepubescent child. At the Cook County Psychopathic Hospital which serves as the admission center for the entire metropolitan district of Chicago and Cook County, Dr. Gerty's statistics for this same year, 1938, indicate that only twenty children under fifteen years of age were admitted, ten female, and ten male. Of the ten males two were juvenile paretics, one a case of organic brain disease, undifferentiated, one, central nervous system lues, other than paresis, one mental defective with, and one without psychosis, and four schizophrenics. Of the ten female children one was a juvenile parietic, one a case of cerebral neoplasm with psychosis, one a mental defective with psychosis, one undiagnosed psychosis, one without psychosis, and five schizophrenics. All told, there were 6,182 admissions to the hospital with 1,152 schizophrenic cases as first admissions and 559 schizophrenic readmissions, a total of 1,711.

Kasanin and Kaufman¹ reported that out of a total of 6,000 patients admitted to the Boston Psychopathic Hospital between 1923 and 1925, 160 were under 16 years; 65 of these were psychotic, including 21 schizophrenics. The one-year difference in age level may account for the larger figures in the Boston group.

It has long been known that the incidence of psychosis increases rapidly after puberty, a period of important psychobiological changes, when children predisposed to schizophrenia become exposed to traumatic environmental factors of a sufficiently severe degree to precipitate a psychosis upon an unstable, poorly integrated personality structure.

CASE MATERIAL

During the last year our psychotic children have included one case of juvenile paresis in a colored boy of twelve, and one of juvenile Huntington's chorea in a girl of fifteen. Both of these children were immediately committed to state hospitals through the Psychopathic Hospital. Three girls from training and correctional schools, with periods of severe excitement were seen. They were of that variety of case seen almost exclusively in girls, which often requires hospitalization and which, for lack of a better diagnosis, is usually classified as "psychopathic personality with periods of excitement." These girls, all of them extremely interesting neurotic character and personality studies, often act out in an impulsive fashion during violent rages and excited states and frequently require constant institutional care.

Two cases of mental deficiency were seen in which similar periods of excitement, sufficiently severe to require physical restraint, were part of the general picture. One case of so-called idiopathic epilepsy with suggestive clouded states was also examined.

There were five cases, which we have added to a special group under separate study, of pre-adolescent children who have carried out serious suicidal attempts, and who, in many cases, at the time of the active suicidal drive at least, might well have been termed psychotic. One of these cases, a boy of 12, seen a year and a half after he had shot himself through the frontal and temporal lobes of the brain, had developed evidence of a definite organic psychosis associated with the actual cerebral damage, and commitment was advised.

Two depressive reactions unassociated with actual suicidal activities were not deemed sufficiently serious to warrant the consideration of institutional care.

All varieties of mental deficiency have been observed including some with physical stigmata, pronounced organic brain lesions, and focal neurological findings, secondary to birth injury, encephalitis, meningitis, etc. There is also the so-called cerebral agenesis variety without focal symptoms, and a type, also without neurological findings, probably due to trauma. These pure defectives are mentioned here because they definitely differ from the peculiar children in the

constitutional group of schizophrenies that I shall describe, although the latter often appear on the surface to be mentally deficient.

The so-called postencephalitic group of cases is one of the most difficult to differentiate from the birth-trauma varieties. These cases are often like those described by Jasper⁷ and his associates, and like many of Shermau's⁹ cases, but whenever in our series a schizophrenic picture has complicated the case I have classified it with the schizophrenic reaction group. The serious behavior disorders occasionally associated with pronounced sexual maladjustment are usually characterized by hyperactivity, poor school progress, distractibility, inability to associate and get along with other children, occasionally mild motor release or epileptic phenomena, and rarely definite choreatic or choreo-athetotic syndromes. In only one case, a true Parkinsonian state occurred. The importance of these cases cannot be overemphasized because they affect prepubescent children, and present a dubious prognosis. Many of these children are over-protected and make only slow progress as they gradually come under the influence of socializing forces.

We are now left with the schizophrenic reaction group regarding which there is so much controversy, frequently even so far as diagnosis is concerned. Twenty such cases were seen during 1938.

For purposes of presentation I have divided the schizophrenic reaction group into three subgroups, although it will obviously be difficult to categorize many of the cases as finely as such a division would imply. As it is almost impossible to obtain all of the anamnestic details that are so necessary in order to secure an accurate impression of personality characteristics and their changes, I may be justly subject to criticism when I say that the children in the first two groups appeared to have made a fairly adequate adjustment until shortly before the onset of psychotic symptoms. Nevertheless there does seem to be a definite difference which I shall later describe, between the cases mentioned in the postpubescent and prepubescent groups, and the constitutional group. The first is considered separately from the second mainly because it consists of cases in which psychotic symptoms appeared after puberty.

POSTPUBESCENT GROUP

This group comprising four of the 20 cases, consists of children all of whom had made a fairly satisfactory adjustment on the surface, at least, until shortly before the onset of active symptoms. These cases resemble most closely the usual late adolescent or early adulthood type of schizophrenic psychosis presenting what is usually accepted as the typical pre-psychotic schizoid personality and fairly clear-cut anamnestic accounts of psychogenic precipitating factors. The following case exemplifies this group of cases:

CASE REPORTS

1. A 16-year-old boy was seen on June 14, 1938, when the family physician told the parents that the boy seemed to be a mental case, and advised interesting the patient in a hobby of some sort.

A maternal uncle is said to be a mental case.

The history is that of a sensitive youngster, the second of three male children. He had always been markedly attached to his mother and quite dependent upon her. While described as a "good and obedient child," he had never had many friends, had always been stubborn and unhappy, and had found it difficult to show affection to his parents or siblings.

Though he seemed to have made a satisfactory adjustment up until the time he entered high school at 12, a definite change was soon noticed. He began to truant without his parents' knowledge, soon lost all interest in his studies, and began to indulge in mild forms of anti-social behavior in the company of other boys. Six months before he was seen at the Institute, he was brought home in a patrol wagon and threatened with commitment to the Parental School for continued truancy.

Demonstrable psychotic symptoms appeared about four months later. He "raved" and shouted, threatened suicide, and was obsessed for a time with the idea that a friend of the family, a mortician, was putting embalming fluid into his mother's coffee. He then began to talk of sticking a knife into his mother, cutting her up, and of killing her in other ways. On occasions he threatened to "knock her brains out" if he found her crying, but whenever she actually cried he became remorseful and promised to be good and obedient. Soon he began to complain of voices in his head, and he felt he had a disease which was making him "rot away." He began to worry about dirt and dirty things, developed a handwashing compulsion, and stated that he must get away from all people, preferably to a small cottage in the North woods, where he could live alone or "rot away in peace."

He complained of the dirtiness of everything about him and wanted to join the Navy or a C. C. C. camp. He refused to get up on the morning of his appointment at the Institute insisting he would prefer to remain in bed and "rot" there.

The mother could not understand why she was such a disturbing factor to the boy and why he directed all of his resentment, antagonism, and other emotional manifestations towards her particularly since he had been her favorite among her three boys, and she had always indicated this preference to him. The father, on the other hand, felt quite guilty because he had not been sufficiently close to the boy in their earlier relationships.

The examination revealed a tall, thin, asthenic youth who presented an adolescent acne, was markedly introspective, severely hypochondriacal, withdrawn, spontaneity-lacking, and, on the surface at least, somewhat depressed. Occasionally his speech became rambling and even mildly incoherent in character and his affect was shallow and rigid. He exhibited bizarre psychosomatic delusions, and stated that his strength was slowly being drained from his body through masturbation and nocturnal seminal emissions. He asserted that he felt the fluids being drawn downward from the region of his head. There were clicking sensations in his head occurring rhythmically with each step. Suggestive hallucinatory experiences were present and described in terms of his conscience. Insight was entirely lacking and the boy reiterated time and again that he merely needed a tonic and a C. C. C. camp to be cured.

A psychometric examination revealed him to be of at least average intelligence.

He was referred immediately to the Psychopathic Hospital to enable him to have shock therapy as soon as it could be obtained for him, although it was felt that the prognosis was a very dubious one.

Since this paper is written primarily from a descriptive standpoint, I shall not attempt to speculate upon the probable dynamic factors responsible for the loss of the reality testing power of the ego, and for the appearance of schizophrenic thinking and patterns of behavior. The case cited is replete with material to suggest a strong underlying conflict in the boy over his concept of sexuality and his relationship with his mother and, of course, his father.

2. In a 14-year-old Negro girl the active psychotic symptoms were preceded by self-depreciatory statements and expressions of guilt over several so-called "sinful sexual experiences," regarding which she refused to elaborate.

3. In a 14-year-old white boy there was evidence of marked oedipus guilt expressed in his relationship to his mother who was separated from his father, and with whom he was living. There was also a pronounced hostility which he felt towards a younger brother and which he repressed only with great difficulty. This boy's catatonic episode responded favorably to metrazol therapy administered at the Chicago State Hospital, and he is now in a fairly good state of remission, almost a year following his discharge.

4. A 16-year-old white girl is a definite hebephrenic, now at the Elgin State Hospital, after having been diagnosed as non-psychotic only a year before by a competent psychiatrist. Her background is exceedingly traumatic, the family a disorganized and broken one,

and she had spent many years in an institutional existence to which she had adjusted very poorly.

PREPUBESCENT GROUP

This group of cases consists of prepubescent schizophrenic reactions in children presenting no history of serious personality or constitutional difficulties preceding the onset of the psychotic symptoms. Four of the cases fit this category, and all are briefly summarized here. The last of these resembles in many respects some of the cases of the first group and is included mainly because the boy's active psychotic symptoms developed before he had begun to manifest any of the usual signs of puberty. While the anamnesis is quite similar to that of the 14-year-old catatonic mentioned earlier, who had received metrazol therapy, it is quite apparent that the outlook is more dubious for the younger boy.

CASE REPORTS

1. A 7-year-old colored girl was seen on November 18, 1938, having been referred through the Chicago Relief Administration, after she had begun to act queerly.

The family history indicates that the mother died in a state hospital in the east six months after the child was born, and shortly after her husband had deserted both of them. The child was brought up by an aunt, and has never been told about her true parents.

In August, 1938, the uncle (foster father) was committed to the Manteno State Hospital with a diagnosis of chronic alcoholism with organic changes, epilepsy, and deterioration. He had deserted frequently prior to that time. There was considerable evidence that the child had been exposed to unwholesome situations in and about the home.

In December, 1937, she was removed from school when she contracted chicken pox. She had not returned to school since that time and had had several other illnesses of a relatively minor nature. In September, 1938, a county physician was called because of the child's vague abdominal complaints and he reported that she was having hallucinatory experiences. The aunt insisted that she had noticed no peculiar behavior prior to that time, although it is obvious that mental symptoms had been present. The family was living above a garage and soon the child complained that gun-fire was occurring and that their lives were in danger. She stated that she heard men's voices saying that the aunt would be killed or injured. She sat in a corner for hours at a time and seemed depressed. She continually washed her hands and changed her clothing and expressed fear of dirt in the food. For a time she suffered from insomnia and remained awake during the night to listen to the voices. She lost weight, cried hysterically, and was afraid to be alone.

At the time she was examined she seemed to have improved considerably. The aunt stated that a great deal of improvement had been noted immediately after the family removed to quieter surroundings, from the rooms above the garage. She gave a history, too, of having been held up and struck on the head by a colored man while walking with the child two years before. The latter was extremely nervous, screaming and crying constantly for a considerable period afterward.

When the child was interviewed she stated that the voices no longer spoke to her, but in the past they had often stated that a man was coming to kill her and do things to her with a gun. Her dreams were concerned with similar sado-masochistic material, and she gave an account which indicated promiscuity in the home on the part of the aunt.

Psychological tests classified her as a borderline defective, but there was considerable scatter, and it was felt that she was probably of higher intelligence.

2. A 12-year-old Jewish girl, whose mother had been committed to a state hospital as a schizophrenic immediately following the child's birth, was seen. The mother had been divorced four years earlier. The child went to visit her in the summer of 1937 and remained until May, 1938. She was unable to get along with her mother, quarreled a great deal, and was told that her birth had been responsible for the mother's mental illness.

When she returned to Chicago she found that her father had married his housekeeper. The child became quite upset, was over-active and excited, insisted on running the household, and did the scrubbing and washing. After two weeks of this behavior she went to live with an aunt for a short time and seemed much better while away from her father and her step-mother. On her return she seemed apathetic, had to be fed, was often mute, and showed no interest in anything.

According to the history, the child had obtained an I. Q. of 142, on a psychological test performed at the school.

When she was seen at the Institute in August, 1938, she presented symptoms of indecision, negativism, blocking, mutism, dissociated affective displays and similar catatonic symptoms.

Arrangements were made for hospitalization at the Michael Reese Hospital. The patient improved, left the hospital in four weeks, is now back at school, but presents definite anxiety and compulsive symptoms.

3. An 11-year-old white boy had an attack of poliomyelitis at four. When he was nine, while the father was away from the farm on which they lived, the hired man murdered the boy's mother. The child is said to have been aware of the circumstances of his mother's death and he begged permission to be allowed to remain away from her funeral.

Shortly afterward there developed symptoms of extreme fear associated with marked temper tantrums. Later he became more and more withdrawn, soiled and wet himself, remained mute over long periods of time,

experienced periods of unexplainable loud laughter, and occasionally sang in a childish fashion.

He was examined at the Institute in June of 1938 and presented fairly typical catatonic symptoms including suggestive cerea flexibilitas, mutism, and stereotyped gait.

The boy had been brought in from a rural community and since immediate hospital and sanitarium care seemed indicated, the father was so advised. There has been no follow-up study.

4. A 14-year-old Polish boy when last seen at the Institute in December, 1938, presented the picture of a typical hebephrenic, adopting hallucinatory attitudes and exhibiting facial mannerisms and sudden outbursts of silly laughter associated with a fearful, withdrawn attitude. The extremities were cold and cyanotic.

When the boy was 2½ years of age he was run over by an automobile, sustaining a fractured pelvis and leg. The fractured extremity remained shorter than the other, but in spite of this handicap the boy was anxious to become a Big League ball player. He tried to dominate other children and as a result got along poorly with them.

The parents, who are first cousins, dissolved their marriage when the boy was nine. The latter has always been resentful of his mother's second husband. He brooded over his parents' separation and during his entire twelfth year was unusually quiet and preoccupied, sitting idly and daydreaming. In June, 1937, he was graduated from the grade school at 12 with excellent grades. The following month he was admitted to the Psychopathic Hospital. He had run away from home when plans were made to have him visit his mother. He carried a toy gun with which to shoot the police. Three days before his admission to the Psychopathic Hospital, his mother visited him and then left. He had felt she was going to remain with him and his father, and when she left he gave her a disdainful look. Shortly afterward he became hyperactive, danced, and shouted, and stated that God was talking to him and directing his activities. He claimed that he was the Lord, kept the shades drawn, and the doors locked, for fear someone would harm him and shouted, "I suffer, but they're going to suffer twice as much."

The father removed him from the Manteno State Hospital against the advice of the medical staff after two months had elapsed and seemed to have no insight into the gravity of the boy's mental condition. The boy started high school in the fall of 1938, and we were asked to examine him in November. In view of the findings obtained through the psychiatric interview, mentioned briefly at the beginning of this case report, removal from school was recommended and recommitment, if it could possibly be arranged. It was found at the time of the examination that we had previously seen the boy shortly after the onset of the psychosis and had at that time advised institutional care and treatment rather than the foster home care which was desired by the father.

CONSTITUTIONAL GROUP

This group of cases differs in many respects from those just outlined. In these children we see reflected throughout the history from birth, or shortly afterwards, definite constitutional variations, at times amounting to true organic difficulties. These youngsters are often referred to as queer and different as far back as one can recall their behavior. Often they are classified as mental defectives on the basis of their response to social and school situations, and even to certain psychological tests. There may be associated constitutional inferiority, physical defects of many varieties, and occasionally even vague neurological signs.

When such children are examined it is difficult to correlate the picture they present with the subgroups mentioned earlier. There is a tendency to search for a history of trauma, encephalitis, or other possible organic etiological factors that might have produced the presenting symptoms.

Ten cases seem to fit into this group, either because the psychotic behavior per se dated back to infancy, or because there was associated mental deficiency or suggestively organic (such as epileptic) phenomena.

In some of the "organic" cases it was trauma or the influence of socializing needs that seemed responsible for the onset of the more active mental symptoms.

CASE REPORTS

1. A 15-year-old white boy, presented a history of having been peculiar and different from other children since early childhood. His mother died on the day following his birth and the boy has one sibling, a boy nine years his senior. The first three years of his life were characterized by insecurity and instability in the home situation. At six, the boy suffered a head injury, sustaining a deep laceration. By the time he was eight or nine, he was characterized as peculiar, lazy, dreamy and indifferent. He continued in high school until the time of his examination at the Institute in January, 1938, having been referred for study when he started a fire in a locker at school. He was a shy, timid, manneristic, apathetic boy, silly, incoherent in his speech productions and hallucinated. Peculiar psychosomatic delusions, a bizarre fantasy life, neologistic formations and many of the other symptoms which we ordinarily associate with hebephrenia were present. In spite of the rather severe disintegration of the normal thought processes, the boy classified as average on two psychological tests and was still attending school. The physical examination was negative. The father refused to consider commitment.

2. A 17-year-old white boy, has been seen at the Institute on various occasions since he was seven years of age. The father feels that the boy was normal until he was five when he was frightened by an explosion nearby. He began to stutter shortly afterwards. There was an old diagnosis of cerebral hemorrhage made when the child was a few months old. The developmental history is essentially normal, however.

At seven, intelligence tests classified him as a borderline defective. At 17, his intelligence quotient was ten points higher than at seven, and he was passing tests at the average adult level. There was a marked scatter and the psychologist felt the boy was not a true defective.

At 13 he was a seclusive retarded boy, called "goofy" and crazy by the other boys with whom he attempted to associate.

By the time he was 16 he had been seen by several neurologists, had been tried in various schools including a military school, and had shown little improvement.

At 17, he was a peculiar manneristic boy who presented a stuttering dysarthria and a strabismus. He had no friends, spent all of his time at home listening to the radio, and indulged in compulsive masturbation. There were suggestive auditory hallucinatory experiences, and he was careless, neglectful of his appearance and talked to himself.

3. A 14-year-old Swedish boy was seen in July, 1938. His birth and early developmental history is said to have been normal. There was considerable difficulty in school with a specific reading handicap and marked general retardation. He had frequent convulsions from the age of one year to four. There was another unusually severe seizure at eight. In May, 1938, he fell from a low-lying roof. He did not lose consciousness. He was removed to the Cook County Hospital following the development of peculiar behavior in school several days later, and a diagnosis of hysterical hemiplegia in a mentally retarded boy with a history of epilepsy, was made. The boy refused to eat or talk and had to be tube fed. He had an I. Q. of 73 and there was a previous I. Q. of 79, obtained two years before at the Montefiore School.

Thorough neurological and laboratory examinations were negative except for a peculiar left-sided hysterical paralysis.

Two weeks after his discharge he was readmitted with a diagnosis of postconvulsive state. He had experienced a severe epileptic seizure in school the day before. He was discharged once again in June.

A month later he was seen at the Institute. In the interim he had continued to act peculiarly at home. He was talkative, cried a great deal, pulled all the shades down, nailed boards on the windows, stated that people were "flashlighting" the home in order to seek him out, and heard the people on the street making slurring remarks about him. He yelled, "I'll kill them! I'll kill them!" He walked the floors wildly, had alternating periods of mutism and talkativeness, and shouted

"I've got enough sickness in my head without having chickens and dirt in my head."

At the time of his examination he was suspicious, adopted hallucinatory attitudes, and stated that the electric fan was broadcasting about him. After a time he became mute, fearful, and stubborn.

His I. Q. was 64 on the Revised Stanford-Binet, although the results were considered low because of the boy's disturbed mental condition. A careful neurological examination suggested the possibility of right-sided cerebral pathology, but the findings were extremely vague.

The boy was committed to the Elgin State Hospital, through the Psychopathic Hospital.

Two additional cases were regarded by us as relatively incipient in that there was none of the usual full-blown symptomatology which we associate with schizophrenia, and only the early withdrawal, autistic thinking, self-preoccupation, and socializing difficulties which stamped the child as different from the others in the school situation and at home.

LITERATURE

Psychoanalytic research has emphasized that the chief difference between a psychosis and a psychoneurosis consists in the fact that the latter is chiefly a conflict between the different structural parts of the mental apparatus, while in the former the relation of the mental apparatus to the external world is disturbed in a pronounced manner. With the loss of the reality testing power of the ego, there is an elaboration of the more commonly recognized symptoms of schizophrenia with which we are all familiar, many of them bizarre manifestations of instinctual tendencies. Alexander² feels that there may be an inherent constitutional weakness in potential schizophrenic patients, though he stresses the post-natal influences in the first two or three years of life when external forces may have been operating in the direction of making external reality unacceptable to the weak, flexible, infantile ego. While in some cases, according to Alexander, there are unusual and violent psychological influences that can explain a rejection of the environment at this stage, there is often a suggestion of other undetermined innate factors that differentiate these cases from the neurotic whose disturbances date from emotional conflicts with environmental factors at the period of the development of the conscience.

Benedek³ has given us added psychological insight into the post-natal period. In a recent ar-

ticle concerned with the adaptation to reality in early infancy, she describes the process of learning in the infant, and emphasizes the importance of satisfying its needs. She speaks of the various frustrations that may occur, and of the effects of these factors upon the psychic and physiologic processes of the infant whose nervous system is still immature and not completely differentiated. Disturbances in the rhythm of the child's autonomic processes are cited.

Heredity and constitution have been blamed for a great deal in contributing even directly to the production of neuropathic and psychopathic children. Yakovlev⁴ has recently described congenital morphologic abnormalities of the nervous system and their functional implications. He, too, has emphasized the congenital fragility of the infant's nervous system, and the fact that reflex integration, particularly in the autonomic division, is a post-natal acquisition. He feels that idiopathic epilepsy, for example, is a "congenital functional and therefore structural malformation of a specific reflex mechanism." Singer⁵ has stressed the importance of the autonomic nervous system in the etiologic and pathologic considerations of schizophrenia. He has postulated that agenesis and defects caused by lesions occurring early in life may involve the autonomic nervous system as well as the corticospinal system, to be expressed in the form of defective energy of reaction, low levels of metabolic activity, etc. Singer prefers to view the psychosis proper as the result of the action of some pathologic lesion upon a given personality, and the schizophrenic picture as a symptom complex that may result from either pathologic or "functional" changes.

Frequently the question has been raised whether it is heredity as such, in the genetic sense, or the influence of the psychotic parent that is responsible for many of the child's difficulties. Of great interest to us at the Institute has been the observation that children who were removed from a psychotic parent showed a remarkable advance in intellectual grasp as determined by the usual intelligence tests, and at the same time evidenced distinct emotional changes for the better. In two such cases intelligence quotients of 50 and 60, advanced to 90 and 100 within a period of two and three years. In one instance involving two young Jewish children, the younger child who had been in contact with

his mother during his most impressionable years, was much more seriously affected from the emotional standpoint than was his older brother who at twelve displayed typical symptoms of a well-marked compulsive character formation.

In considering the prenatal and postnatal influences, one cannot overlook the birth process as such, whether we speak of the trauma of birth in a psychological sense or of organic birth trauma. Investigative work is pointing more strongly to the importance of varying degrees of birth injury in producing neurological disorders, the etiology of which had previously been unknown. Recently Peterman⁶ stated that the greatest hazard of the new-born infant is his passage through the birth canal and from 10 to 12 per cent. of all babies born in a normal delivery have some degree of damage or injury to the brain. With abnormal or pathological labors this percentage rapidly increases to nearly 100. Improvements in technique and interpretation in electroencephalography have opened a new field in the understanding of some of these vague traumatic changes. The old concept of cerebral birth palsy of the spastic or choreo-athetoid variety as the chief representative of the group of birth trauma conditions, is giving place to the feeling that trauma may occur in many parts of the brain, may vary in degree as well as location, may exert a direct influence on the child's development, and may frequently be unassociated with gross pathological changes.

We see not only mental defectives in this group of trauma cases, defectives that differ from the type associated with so-called cerebral agenesis, but also a distinct group of children whose sole symptoms consist of restlessness, inability to concentrate, impulsiveness, distractibility, and inability to get along with other children, all associated with varying degrees of motor release phenomena and intellectual changes. Occasionally epilepsy appears as well, and actual psychotic symptoms may occur. The young, so-called constitutional schizophrenic mentioned in this paper, and constituting the major portion of the group of schizophrenic psychoses herein described, may belong to this group of "organic" cases.

Jasper⁷ and his associates have completed electroencephalographic studies of 71 behavior problem children, 12 girls and 59 boys. Thirty-five had a history suggestive of central nervous

system disorders, encephalitis, birth trauma, post-natal trauma, etc. Eleven of the cases were classified as schizoid or schizophrenic. In the entire group of 71 cases, 71 per cent showed abnormalities in brain potential, very marked in 59 per cent, and of the epileptiform variety in 39 per cent. Jasper and his associates conclude that abnormal brain function as revealed by the electroencephalogram is an important component in the etiological picture of the majority of a group of problem children whose disorder had been considered as primarily psychogenic previous to using this new method of diagnosis. While the nature of the fundamental pathology of the brain indicated is not as yet known, the findings have been found important in evaluating prognosis and treatment, according to these authors.

Since the function of the brain cannot be revealed by the electroencephalogram at the present time, one must accept these results and conclusions with certain reservations.

Our so-called "organic" cases suggest a variable type of lesion and are quite confusing from the diagnostic standpoint. Early in life these children may be called defectives, post-encephalitics, or more rarely, pre-schizophrenics. Usually, however, active schizophrenic symptoms begin only when the child is presented with his first socializing influences and is unable to meet the requirements of reality as a result of his many handicaps.

Potter and Klein⁸ have classified problem children into an organic reaction group, a situational reaction group, and a psychotic group. In the first they include idiopathic epilepsy, mental deficiency, juvenile paresis, and behavior problems secondary to organic conditions. The psychotic group is concerned chiefly with schizophrenic reactions. These authors reported fourteen such cases and in all of them the onset of the psychosis was before twelve years of age, actually before five years of age in seven. Since only one of the fourteen schizophrenic children improved sufficiently to make an adequate social adjustment, the authors concluded that a constitutional inadequacy factor must be emphasized, whatever it may be.

Sherman⁹ recently reported studies of 17 schizophrenic children who were observed for periods of from six months to four years. He points out the great difficulty in recognizing and

defining mental abnormalities in children and the general tendency to pass them off as behavior problems in the broad sense of the word. He justly emphasizes the fact that we are usually dealing with the end-results of a long standing psychotic process when we are confronted with the typical hallucinated and delusional deteriorated schizophrenic. He called his children schizophrenics mainly because the pattern of their behavior resembled in many ways the behavior and symptoms of adult schizophrenic patients.

McFarland and Goldstein¹⁰ have summarized the present-day status of biochemical studies in dementia praecox. Quoting them, "The schizophrenic seems to be born tender and exceedingly vulnerable to the 'hurts of the world' and must be protected from the buffets of the environment." They feel that most investigators are of the opinion that the schizophrenic psychosis is a multitude of disorders of various etiologies, and that the schizophrenic reaction is merely a symptom common to this heterogeneous group which includes all causes, physiological, psychological, and others. For that reason they are of the opinion that the biochemistry of schizophrenia may ultimately prove as meaningless and inconclusive as the biochemistry of backache or of abdominal pain, simply because patients have been classified on the basis of reaction-type rather than of etiology. This would apply equally as well to other studies in schizophrenia.

COMMENT

It appears that the so-called schizophrenic syndrome may occur under a large variety of conditions. It is obvious, too, that what we recognize as such a syndrome is relatively rare before puberty and that its incidence rapidly increases from that time to reach a maximum in the middle of the third decade of life. The majority of the cases seen in early childhood appear to belong, generally speaking, to a group characterized by phenomena which seem to be associated with basic organic changes, whatever they may be more specifically. These children appear to be closely related to a type of child, early recognized as a severe behavior problem, and characterized by a symptom complex of hyperactivity, restlessness, asocial tendencies, etc.

Clinical impressions, supplemented by recent electro-encephalographic studies, suggest that there are actual "organic" changes in these cases,

and that the total personality is so affected that it is difficult to obtain an adequate social adjustment of the individual with reality and his environment.

It seems that the prenatal and natal influences play an important role in these cases in producing constitutional inadequacies so serious that all subsequent developmental changes are affected.

Our more recently acquired knowledge of the importance of psychosomatic relationships, particularly as they involve the autonomic nervous system and the emotions, furnishes us, however, with the necessity of regarding the first two or three years of life during which the so-called disposition of the individual is molded, as an extremely important period.

Since we are dealing with a fragile, flexible autonomic nervous system in which only postnatally is there actual reflex integration, one may postulate the importance of such psychological factors as early rejection, severe oral thwarting, threatening sexual experiences, punishment and frustration, in contributing to more or less permanent changes in the child's psychobiological life.

It is obvious, therefore, that external influences, both psychological and biological, can affect the future functioning of the individual as a psychobiological unit. Preventive work and mental hygiene activities must therefore concentrate not only on the eugenic aspects of marriage and the great need for careful obstetrical management of every case, but also on that postnatal period just described when a child must develop what Benedek has described as the emotional relationship of "confidence," associated as it is with security, regular satisfactions of individual needs, etc. If these factors are adequately controlled, and if the relatively new psychological knowledge gained through psychoanalysis can be brought into play in the training of the child, there may possibly be fewer schizophrenics, and those cases which do develop later through the appearance of intolerable environmental factors, can then be treated through the removal of the latter, if possible, and then followed up with adequate psychotherapy.

In our group of postpubescent cases psychological factors appeared to be most significant and in these children it seemed that the psychosis occurred when the child was unable to sublimate in a more normal way strong instinctual ten-

dencies which conflicted greatly with a rigid super-ego.

In the prepubescent group it appears that a psychopathic hereditary taint was present, and the psychotic symptoms, when they occurred, seemingly because of psychogenic precipitating factors, were rather bizarre and of an acute nature.

The constitutional group is a motley one. With careful observation on the part of interested individuals, these cases can be recognized earlier than the others and can be followed carefully as a result. It is interesting that many of these children had been under observation at the Institute for years. They were usually able to adjust to some degree, in spite of the recognized peculiarities, until they arrived at late adolescence when it was no longer possible to overlook their need to become social individuals. It then became necessary to consider for them care in a protected environment such as an institution, particularly since these children usually become more withdrawn and develop more autistic symptoms as they grow older. It is interesting to see how many of them continue to attend school for years while presenting definite peculiarities.

I have been obliged to omit the more detailed symptoms of these various schizophrenic children, as well as a consideration of the dynamic factors which appear to indicate an early "split" in them. It is our hope to continue these studies.

SUMMARY

1. A review of the psychotic children seen at the Institute for Juvenile Research during 1938 is presented.

2. The various so-called schizophrenic cases are described and their differences enumerated.

3. The importance of the different etiological factors is postulated for present and future study.

4. There is obviously a need for special facilities for the hospitalization, investigation and treatment of these psychotic children.

BIBLIOGRAPHY

1. Kasanin, J., and Kaufman, M. R.: *Am. J. Psych.* 9: 307, 1929.
2. Alexander, Franz.: *Arch. Neur. and Psych.* 26: 815, 1931.
3. Benedek, Therese: *Psychoanalytic Quarterly.* 7: 200, 1938.
4. Yakovlev, Paul I.: *Arch. Neur. and Psych.* 41: 119, 1939.
5. Singer, H. Douglas: *Jour. A. M. A.* 110: 2048, 1938.
6. Peterman, M. G.: *Bulletin North Shore Branch Chicago Medical Society*, Apr., page 1, 1939.
7. Jasper, H. H., Solomon, Philip, and Bradley, Charles: *Amer. J. Psych.* 95: 641, 1938.

8. Potter, Howard W., and Klein, Henriette R.: *Am. J. Psych.* 94: 681, 1937.

9. Sherman, Mandel: *Child Development.* 10: 35, 1939.

10. McFarland, R. A., and Goldstein, H.: *Am. J. Psych.* 95: 509, 1938.

DISCUSSION

43 E. Ohio St.

Dr. Maxwell Gitelson, Chicago: I should like to confine my discussion to the constitutional group in which there is evidence of non-integration of the ego, a non-integration of the synthesizing capacity of the patient. This can be subsumed under the statement that it represents a group in which the reality testing ability has failed to reach completeness. If we are to keep this point in mind, then we have a legitimate question as to the ego which has failed to be integrated and as to what happens to it.

We know that the reality testing capacity is not always present. We know that it has to begin in the very earliest phase of our development. The observations that have been made indicate that the reality testing function makes its appearance during the first year of life under the auspices of the maternal care which the infant is at that time of necessity receiving.

To begin with there is no external reality in the sense that we recognize it in life. There is no differentiation between a "me" and a "you." The first differentiation between the "me" and the "you" is, roughly, connected with the weaning from the breast or the weaning from the more intimate relationship with the mother and represents a normal vicissitude in the life of the individual. The point that I am getting at is that the schizophrenias as we usually see them represent a great regression, or breaking down and return to this non-object level of an individual's development. In Dr. Falstein's "constitutional type" the individual has never evolved from his non-object level.

This brings me to the next point in my discussion and this is apropos of the so-called organic factors in the development of schizophrenia. The development of the ego begins at an early period. The integration which the individual acquires in respect to social conduct, those adjustments which he learned through the relationship of security with the mother, his reality testing ability, are educational processes. Where this atmosphere of security and the supplying of the basic needs and basic tendencies is not available, the educational process suffers and the individual acquires his first cognizance of reality as an excessively dangerous thing. This process occurring as early as it does, during the time when organic integration, as we usually understand it, is also going on, is bound to present us with phenomena in which there is an over-lapping of more purely psychic distortions of development and more purely organic distortions of development. I do not believe we are in a clear-cut position to decide that birth injury as such or severe infantile illness as such is the causative factor in the development of "constitutional" schizophrenia, but that they are factors which interfere with the primary educational process, factors which interfere

with the acquisition of integrative and adjustive powers which we call the ego.

With respect to the other types of juvenile schizophrenia in which the ego seems to have been more or less well developed, there are two etiological factors to be considered. The situation which is biologic, which appears at puberty with an exacerbation of the endocrine functions, and secondly, the situations which are connected with actual dangerously seductive relationships with individuals in the world at large. For instance, I recall the case of a young schizophrenic who from birth had been exposed to such a seductive relationship with his psychotic mother who was able to resume a relatively normal development by the procedure of separation from the mother.

Schizophrenia may be the consequence of a weakening of a relatively intact or well developed ego by exogenous factors such as intoxications, injuries or other similar organic disturbances. The point that Jasper has made about the evidence of organic disturbance in the brain on the basis of his encephalographic findings explaining behavior defects in children needs to be questioned because with the possible exception of the encephalogram of epilepsy, the finding may be reversible. I would like to state that data are being gathered by Dr. Leon Saul at The Institute for Psycho-Analysis showing that during the analysis of neurotic patients encephalographic waves have changed.

A propos of the previous discussion of general trauma and head injury, we have within the last year at the Institute for Juvenile Research had the experience of having a case sent in by a family for examination, found the child feeble-minded, so stated to the parents, and advised commitment. This was followed by a letter from the family lawyer asking us to testify to our findings in a suit that the parents had entered against an automobile driver for injury to the child. Fortunately in this case we had examined the child some years before the injury and knew the child's feeble-mindedness to have antedated the accident, but in a number of less clear-cut cases similar problems have arisen. So I should like to emphasize the necessity of a careful study of the character of the preceding personality in respect to feeble-mindedness and previous psychotic and neurotic disturbances before connecting the final picture with trauma.

CARCINOMA OF RECTOSIGMOID IN PATIENT TWENTY-SIX YEARS OF AGE; SIX-YEAR CURE FOLLOWING ABDOMINAL RESECTION

GUY V. PONTIUS, M.D., AND

E. LEE STROHL, M.D.

CHICAGO

A male, 26 years of age, a shipping clerk by trade, entered St. Luke's Hospital March 3, 1933, complaining of constipation of eight months' duration. For six months he occasionally had

noted bright red blood in the stool, with paroxysms of diarrhea for four months, followed by constipation, and the loss of ten pounds, which was attributed to a lack of appetite by the patient. The family and past histories were essentially negative.

Physical examination revealed a well-developed young male weighing 150 pounds. The erythrocytes numbered 4,120,000 per cu. mm., the leucocytes 8,350 per cu. mm., and the hemoglobin determination revealed 15.5 gms. per 100 cc. The differential blood count was normal. The urine examination was negative. The blood pressure was 112/68. A proctoscopic examination revealed an annular obstructing lesion at the rectosigmoid junction. A portion of the tumor removed for microscopic study was reported to be adenocarcinoma. The patient was put on a low residue diet for 72 hours and the lower bowel thoroughly emptied by repeated enemata.

Under ethylene anesthesia, a low mid-line incision was made. Just distal to the peritoneal reflection was a napkin ring obstruction; the opening in the tumor admitted only the tip of the index finger. No palpable regional lymph nodes were found. There was no evidence of metastasis in the liver.

Through a left muscle-splitting McArthur incision, the colon was exteriorized for a colostomy. The colon was opened with an electrocautery at the end of 48 hours. The course was uneventful and the lower loop was irrigated regularly with normal saline solution.

Ten days following the abdominal exploration, the patient again was operated upon. Under ethylene anesthesia the midline incision was reopened. The tumor mass was resected and an end to end anastomosis made. A Penrose drain was inserted just below the peritoneal reflection. The postoperative course was smooth and the patient was discharged fifteen days following the second operation.

The pathological examination revealed that 10 cm. of bowel were resected with the tumor lying midway between the two ends. The lumen of the bowel at the point of constriction measured 1 cm. Two lymph nodes contained metastatic carcinoma. The patient was given Roentgen therapy the succeeding three months and has been observed at frequent intervals during the past five years. At the time of writing, he was at his peak weight of 180 pounds; he stated he

"felt better than at any other time" in his life. His bowel habits were regular. Proctoscopic examination revealed a slight constriction at the site of anastomosis.

DISCUSSION

This case is of interest because of the age of the patient, he being 26 years old. Carcinoma occurring under the age of 35 years presents an extremely poor outlook. Five-year cures are not common and many patients are unoperable due to early metastasis by the time the surgeons is consulted. In the past ten years, we have had four cases of carcinoma of the rectum and sigmoid in patients under the age of 30 years; one, 22 years of age, male; two 26 years of age, both males; and one 28 years of age, female. The one at the age of 22 years, had generalized abdominal metastasis under exploration and lived 18 months following colostomy. This case was our second. The third patient, also at the age of 26 years, had generalized abdominal metastasis and lived 14 months following colostomy. The fourth, 28 years old, was resected. She was alive after four and one-half years and apparently free from any recurrence. It was interesting that she had formed an iliosigmoidostomy. In our clinic, fifty per cent. of young patients with malignancy of the recto-sigmoid under 30 years of age have had successful end results. Such favorable results, however, should not be anticipated in any sizable series of cases.

The type of resection made is also of interest. According to Miles, carcinoma of the rectum spreads by lymphatic extension downward as well as upward and, therefore, involves the sphincter structures, the perineal skin and the ischorectal spaces. We have never observed this downward spread nor the involvement of these structures except by direct extension. In other words, a growth to involve these structures must be, primarily, very low. For several years we have been impressed with the infrequency of these findings and, except for the very low growths that involve the perineal structure by direct extension, have not observed such downward extension. Probably many perineums are being sacrificed without any particular advantage.

According to Westheus, a German surgeon, and David and Gilchrist, metastatic develop-

ment from carcinoma of the recto-sigmoid region occurs cephalward and very rarely distally. When it does occur distally the nodules are found in near proximity to the parent tumor. Thus it would seem that it would be sufficient to amputate the bowel approximately five centimeters below the parent tumor. If this can be done and the blood supply of the bowel will permit restoring continuity of the bowel, it would seem advisable to do so in selected cases.

This particular growth, as pointed out (E.L.S.) was mainly below the peritoneal reflection; therefore, the lower segment of the bowel, after extirpation of the tumor, was devoid of serosa. This causes a rather difficult anastomosis as sutures do not hold well and care must be exercised to avoid tension. Infection is not a serious problem because sufficient time is allowed to elapse following primary colostomy. The isolated bowel becomes surgically clean or void of pathogenic bacteria; approximately three weeks are sufficient for this to occur. Irrigations and mild antiseptics, such as boric acid or from one to five thousand potassium permanganate, may be administered. The pelvic peritoneum is closed about the bowel and above the site of the completed anastomosis. A small cigarette drain is placed to the site of the anastomosis and brought out the anterior abdomen.

Microscopic study of this specimen revealed cancer cells in the perirectal fat, as well as lymph-node involvement. The question as to whether or not all cells had been removed became very important. The feeling was that they probably had not been. Roentgenotherapy, therefore, was decided upon. Dr. E. L. Jenkinson, radiologist at St. Luke's Hospital, always wary of treating patients in whom bowel and anastomosis recently had been done, felt that if sufficient therapy were had to destroy cancer cells, the anastomosis may break down. This thesis was well demonstrated in this case. About three months were allowed to elapse before therapy was begun. During the process of therapy, however, the mucous membrane, involving about one-half the circumference of the bowel, broke down. This required about six months to heal again. No complications, fortunately, arose. It is not known how much credit is due Roentgen therapy in this patient nor can we compare, for our resected malignancies are not treated routinely.

THE EFFECTS OF SMOKING*

JEROME R. HEAD, M. D.

Associate Professor in Surgery, Northwestern
University Medical School

CHICAGO

The present paper is a report of experiments undertaken in the hopes of explaining the nature of the hold which tobacco has upon its habitual users—why they feel so badly when they smoke and why they feel so much worse when they stop smoking.

There is ample evidence apart from that supplied by experimental methods that tobacco contains drugs which are habit forming. Most persons who smoke, if they are quite frank, realize that it is bad for them, and wish frequently that they were rid of the habit. Most, too, make frequent ineffectual attempts to stop, and cut down or stop entirely, but then drift gradually back, realizing that the thing has them and that they cannot afford the months of discomfort and depression incident to the cure. Admitting their defeat, they content themselves with advising others not to start.

Further evidence is the strange industry with which the smoker goes about finding tobacco or a match when the time comes for him to smoke. One would walk more than a mile for either of them.

Before proceeding, I should remark that the statements made in this paper hold only for those who inhale tobacco smoke. The habit is rarely formed by those who do not draw the smoke into their lungs and the physiological effects here noted are not produced. The lungs are one of the largest and most important absorbing surfaces of the body and it has been proved experimentally that drugs injected into them are absorbed more rapidly than when introduced into the body by any route save that of the blood stream.

Further evidence in support of the contention that tobacco contains habit forming drugs is the fact that a tolerance can be acquired for it,

that eventually the smoker can take doses which if consumed when he was first starting to smoke would have been certainly fatal. In my own case, my first essays at smoking when a boy were followed by severe prostration, terrible nausea, and worse vomiting. Determined to be a man, I persisted and gradually acquired a tolerance. In spite of this, for many years, if I smoked a cigar or inhaled too many cigarettes, I became sick. I had to watch the dose. That is all past now and I can smoke any number of cigarettes or cigars, and can chew tobacco and swallow the juice without suffering worse consequences than a tiredness and laziness the following day.

I became curious, as who would not, realizing that smoking kept me from normal efficiency, why I was unable to stop, why I felt so badly when I smoked, and why I felt so much worse when I did not; why I had to smoke as soon as I rose in the morning and before I felt awake and ready for the day, why I had to go out to smoke between acts at the theatre, why in fact I was such a slave to so pleasant and miserable a habit.

Ordinarily I smoke ten to twenty cigarettes a day. If I smoke the latter number for a week or more I become tired, irritable, and nervous, and am troubled with insomnia. These symptoms become so bothersome that I am led to cut down to ten or less a day but then, feeling better, I gradually relax the effort that this entails and am soon back at my maximum and am again soon warned to cut down. I do not smoke before breakfast, but I go down to eat before shaving so that I can get in my smoke without delay. The first morning cigarette occasionally makes me slightly dizzy and until I have finished it I do not feel awake or ready for the day. During the first hour after breakfast I usually smoke three or four cigarettes. After that I smoke whenever I am not doing something that makes it impossible. I smoke between courses at meals and rush my dessert so that I can have my cigarette. The desire seems greatest after a meal. Smoking just before a meal cuts down my appetite noticeably. I do not, as some do, wake up in the middle of the night to smoke. If I am nervous about anything or have any ordeal to go through, I smoke one cigarette after another.

The pleasure of smoking is, like drinking water when thirsty, a relief from the discomfort

This paper was written in the year 1930 and presented before the Evanston Branch of the Chicago Medical Society in May, 1931. I have heretofore refrained from publishing it, feeling that observations made on a single case were not sufficiently conclusive. Although the whole subject of the effects of tobacco has been extensively investigated since this paper was prepared, on re-reading it lately it seemed to me that it was valuable in its description of the symptoms of tobacco deprivation and that the physiological findings were sufficiently suggestive to warrant further investigation.

that rapidly develops if I do not smoke. The nature of this discomfort has been rather difficult to analyze. Unless one regards it closely it is recognized merely as a desire to smoke. About an hour after I have had a cigarette I develop a peculiar sensation in my mouth. I cannot tell whether it is a dryness or a wetness or what it is, but my tongue and lips and cheeks come into my consciousness and seem swollen and burn slightly. I feel like sucking my cheeks, biting my lips, and scraping my tongue over my teeth. I experience a metallic taste. Sucking pebbles or hard candy or chewing gum afford considerable relief. This increases for an hour or two and then remains at its maximum for at least two months, which is as long as I have ever refrained from smoking. As it becomes more severe there develops a sense of tightness in the face. This and the other mouth sensations are, as the experiments to be reported indicate, probably incident to an overactivity of the salivary glands.

During the second hour and soon after the appearance of the mouth symptoms, I begin to be conscious of my legs and arms—in fact of my whole body. It is difficult to describe these sensations accurately, for there is no other feeling like it. It is not so much a pain as an awareness of every muscle and nerve in the body. This is the true urge to another cigarette and disappears almost with the first puff. It is very pleasant to be relieved of it. Coincident with the appearance of the other symptoms my respirations become slow and irregular. Typical vagal sighs are frequent.

As the desire to smoke increases I become mentally dull. I cannot work or concentrate. If I keep awake I cannot sit still but have to walk about or do something. All that I can think of is smoking. I can go to sleep easily, much more easily than when I am smoking, and sleep is desirable as a relief from the discomfort. Active physical exercise, such as brisk walking, relieves most of the symptoms.

It has long seemed certain to me that these severe subjective symptoms must be manifestations of definite physiological alterations. To determine what these were, I studied the effect of smoking upon the pulse, the respirations, the blood pressure, the basal metabolism, and the rate of salivary excretion.

On rising in the morning after eight hours of deprivation, I found that my pulse and respirations were slow, my blood pressure and basal metabolism low and my salivary secretion markedly increased. At this time of day and continuing until my first cigarette my pulse varies between 55 and 60 beats per minute and my respirations between 12 and 14. My blood pressure runs from 90 to 100 systolic and 60 to 65 diastolic; my basal metabolism is -10 to -5 and my salivary excretion 5 cc. in three minutes. I feel apathetic and mentally dull and irritable.

By the time I have finished inhaling a cigarette—almost immediately—all of these factors return to normal. My pulse rises to 84, my respirations to 20, my blood pressure to 120/75, my basal metabolism to Plus 4 or Plus 5, and the flow of saliva is stopped almost completely. At the first few puffs my head swims a little, but by the time I have finished the cigarette this has passed, my mental depression has disappeared and I feel awake and ready for the day. I almost immediately have the urge to defecate and do this promptly, rapidly, and satisfactorily.

If I smoke only the one cigarette, all of the factors observed remain at their new level for approximately an hour, but then during the second hour begin to fall off, the pulse and respiration first, and the blood pressure later. The onset of these changes coincides with the appearance of the desire to smoke and the desire increases commensurately with the changes. The changes in the respiratory rate and rhythm are very noticeable. I breathe slowly and deeply and have occasional deep sighing respirations. By the end of two hours I am decidedly uncomfortable and the readings have all approached the pre-smoking level. If, at this time I smoke another cigarette, they all return rapidly to normal as they did earlier.

If I smoke every two hours during the day this same cycle is repeated during each period and the curve for the day shows a series of rapid rises and gradual falls.

If I smoke every hour during the day there are slight falls towards the end of the first two hours but after that the pulse, blood pressure and respirations remain at a constant normal level. Smoking more frequently does not further elevate them yet I have a feeling that towards

the end of the day I smoke more often and with less enjoyment than in the morning. I believe, although I have not proved it, that this is because the nervous system has become tired from repeated stimulations. It is probable that this also explains the increase in the general physical weariness which approaches towards evening and which is greater on days during which I have smoked excessively.

These findings suggest that inhaling tobacco smoke stimulates the sympathetic nervous system, as opposed to the parasympathetic, much as does adrenalin, and that eventually these nerves become dependent upon the drug to maintain them in normal tone and to keep them in balance with the parasympathetics. When the habitual smoker refrains from smoking his sympathetic nervous system, dependent on the drug for normal function, becomes depressed and the parasympathetics assume control. He becomes definitely vagotonic. He must smoke to remain normal.

As has been stated, the phenomena studied, the pulse, respirations, blood pressure, basal metabolism, and salivary excretions, all indicate that cessation of smoking induces a predominance of the parasympathetic nerves over the sympathetic. If this is so, then all of the other vegetative functions are altered by smoking or by refraining from smoking. Tobacco deprivation must produce an increased secretion of gastric juice, an increased peristalsis, a tightening of the gastrointestinal and urinary bladder spincters, an increased secretion of insulin, a lowering of blood sugar and so on and so forth. On the other hand, smoking must cause a decrease in the secretion of gastric juice, a cessation of peristalsis, in fact the reverse of all the states produced by not smoking.

These changes explain why smoking immediately before a meal destroys the appetite, by cutting down the psychic flow of saliva and gastric juice and this loss of appetite helps to explain the loss of weight incident to smoking and the rapid gain on stopping. Stimulation of the sympathetics accounts for the prompt appearance of the desire to defecate after the first morning cigarette, and preponderance of the parasympathetics, the tendency to rectal constipation and incomplete defecation associated with refraining from smoking.

The effects on the entire cardiovascular system can easily be predicated.

That smoking causes a stimulation of the sympathetics and not smoking a domination of the parasympathetics is not entirely a justifiable conclusion. The phenomena observed can as well be interpreted in the opposite sense, that tobacco causes a depression of the parasympathetics, which, upon the habitual use of the drug, adapt themselves to withstand it and maintain their function under its effects, and upon cessation of its use become overactive.

Granting that smoking is a physiological habit, it is important to know how strong a habit it is. Bert Leston Taylor used to speak of it and defend it as one of the minor vices; and that it is not a bad one is argued by the relative impunity with which it is indulged in by so large a proportion of the population.

As vices go, it is probably comparable to the common cold among illnesses. But the common cold, while not threatening life, is, because of its prevalence, a very important disease, accounting in the aggregate for a tremendous loss of working time and a still greater loss of working efficiency. Smoking similarly, while rarely causing serious consequences, certainly is a bad thing for the individual and for the race.

It is not an especially strong habit. While it is uncommon to find anyone who inhales who stops permanently, many do stop for long periods. Those who stop permanently do so usually because they have been frightened by symptoms attributed to smoking. Deprivation causes discomfort but no serious manifestations.

In my own case, I can bring myself to undergo the discomfort incident to stopping only by imposing upon myself some forfeit for breaking my resolution. I can do this best by betting with some one else that I will not smoke for a given period. In this case pride and the unwillingness to lose the bet are sufficient to hold me to my purpose. I recently stopped for two months. I did not, during this time, keep records of the phenomena observed in the shorter experiments and consequently can only report on my subjective symptoms and the more obvious physiological phenomena.

After the first day, and as soon as I had convinced myself that I would not give in to my desire, the discomfort was less bothersome. It was not absent, but I simply went about my

business and frequently forgot it. I was more comfortable when walking or exercising strenuously or doing anything that tends to raise the blood pressure. The discomfort and desire was not constant. On some days I would notice them very little and again they would come back as strongly as ever and for long periods the thought of smoking was constantly in my mind. Waves of desire to smoke were associated usually with lack of sleep or worry. The last week of the two months was the most difficult for the thought that I would soon be able to smoke was constantly with me.

Throughout the two months I kept a piece of hard candy in my mouth most of the time. The oral discomfort persisted throughout the period. My appetite was better than it had been since I can remember. I looked forward to and enjoyed my meals, a thing I rarely do when smoking. During the two months, I gained 15 pounds and was still gaining when the time came to smoke again. I slept well and was more rested when I wakened in the morning. When I am smoking I am occasionally troubled with insomnia. This did not bother me and in the morning, instead of finding it almost impossible to get up, I wakened sharply and felt refreshed and liked rising immediately.

Throughout the two months my bowels were sluggish and irregular, and defecation incomplete and unsatisfactory. I rarely had the urge to move my bowels and when I did it was not at the habitual time.

By the end of a week I noticed that cigarettes and tobacco in general had an odor that I had not associated with them since boyhood. I had always believed that cigarettes were different then, but realize now that saturation with tobacco smoke has made me insensitive to their sweetness and aroma.

One of the striking phenomena incident to not smoking was my reaction to coffee. Coffee usually makes me nervous and a single cup after four in the afternoon will keep me awake far into the night. There are times when I am smoking much that even a single cup in the morning makes me nervous and excited until noon. During the two months that I was not smoking, I could drink as much coffee as I wished without becoming nervous, and two cups at supper and one late in the evening failed to keep me from sleeping.

Finally the great day arrived and I hurried through my breakfast and sighed with relief as I lit a cigarette. I was to be normal again. I was unpleasantly surprised. Not only did the smoke taste like that from an old rag but on attempting to inhale I was choked up as I had been when I was learning. It was evident that I would have to learn to smoke again. After taking a few puffs I threw the cigarette away and went to the store and bought a package of de-nicotinized cigarettes. These, although they tasted bad, I could inhale and doing this lustily I went about my work. The second surprise followed quickly. I found myself nauseated—truly sick, as I had not been for years—and I had to spend the morning in the rest room and in close proximity to the toilet.

That was three months ago. By gradually increasing the dose I have again become a smoker and can inhale regular cigarettes like a regular fellow.

It will seem strange to many that having stopped for two months one should return to a habit which he realizes is unnatural and deleterious. I returned simply because I could no longer afford to be as inefficient and as disturbed psychologically as I was when refraining. It is my belief that the most serious and important effects of not smoking are manifested in changes in personality. Smoking, as we have seen, stimulates the sympathetic nervous system and, I am sure, has certain sedative effects upon the cerebrum. The sympathetic nervous system controls the function of the glands of internal secretion and these in large part determine one's personality. When one smokes he is content to sit and do nothing else. He is stimulated physically and soothed mentally. Pressing problems and the worry and perplexity of existence can be put off momentarily while one withdraws behind his smoke screen. When he comes out he is perhaps a little better able to deal with them. He is keyed up and the mind is in a state less easily daunted. However this works, it is certain that smoking weaves itself into one's whole scheme of life. It is a pacifier, a stimulant, a temporary retreat. One's whole physiology and psychology become dependent upon it. To stop is not only to alter one's basic physiology but one's whole personality, his whole method of reacting to his surroundings. One can no longer relax momentarily and escape, nor

stimulate himself to meet problems, or dull himself to withstand their onslaught. He is a different person, strange to himself, and life is different. To expect one to change 20-year-old habits of physiology is not too much, but to expect him to change psychological habits of this long standing, to alter his whole scheme of reacting to his surroundings is to expect more than is just or reasonable. Most prefer to go on with themselves as they have been rather than start anew with a personality that is strange and which may be, after all, less efficient and less satisfactory than that moulded for them by the drug. So they keep on smoking, but they advise others not to start.

Tobacco contains drugs which have a powerful effect upon the sympathetic nervous system, drugs which are definitely habit forming. That smoking is a vice is certain but that, as B.L.T. has said, it is a minor vice, is equally sure, for most of us smoke immoderately and yet work hard and effectively and live long. It is even conceivable that smoking accounts in part for our ability to meet the increasing strain of business life without breaking. It is probable that for certain psychological types it is more beneficial than harmful. I feel that the psychiatrists would do well to investigate this aspect of the drug and perhaps prescribe it for their vagotonics.

What role it has in producing disease is uncertain. To find that the blood pressure of smokers is not higher than that of non-smokers means this and nothing else. It does not mean that the repeated rises of blood pressure, the repeated lashes of the sympathetic nervous system do not affect the coronary vessels and in the long run lead to sclerosis and occlusion. It is quite conceivable that they do, and no one is justified in saying that the increase of sudden cardiac deaths in men under 60 is not bound up with the recent increase in cigarette smoking. We know that cigarette smoking plays a role in the etiology of Buerger's disease and there is reason to believe that it should do some permanent damage to the whole peripheral vascular system. It must be definitely injurious to the sympathetotonic personality.

All of these questions are important, are undecided, and are extremely difficult to investigate. That they should be investigated carefully by the medical profession or the public health

service is obvious. It is an anachronism that as a people we should allow the cigarette manufacturers to entice young men and young women to develop the habit of using so strong a drug without knowing more about the effects of its use.

SOME EFFECTS OF THE INJECTION OF PITRESSIN IN DEMENTIA PRAECOX

ISIDORE FINKELMAN, M. D.

CHICAGO

and

ABRAHAM SIMON, M. D.

ELGIN

Evidence of dysfunction of the vegetative nervous system in dementia praecox has been reported by many workers. However, it is not known whether there is a deficient reactivity of the peripheral portion of the vegetative nervous system, in the center, or both. A study of the effects of a drug which acts on the effector organs innervated by the vegetative nervous system should help in partly clarifying this problem. For this purpose we used pitressin. Pitressin is an active principle of the posterior pituitary gland which stimulates intestinal peristalsis, reduces kidney excretion and is said to cause a rise in blood pressure.

The effects of the injection of pitressin was studied in 15 acute schizophrenic patients, five patients with manic-depressive psychosis, four patients with epilepsy and five normal subjects. Ten units of pitressin were given intramuscularly and the blood pressure and pulse were taken every two minutes for thirty minutes. Due to the vasoconstrictor effects of pitressin the skin of the face was markedly blanched but no untoward effects occurred. In many of the subjects these tests were repeated for several days. Blood sugar levels were also determined before and every fifteen minutes for ninety minutes after the injections of pitressin. There was a transient rise in blood pressure five minutes after the injection for an average of 10 mm. of mercury, systolic and diastolic in ten schizophrenics. In three there was no change and in two it was lowered. This slight pressor re-

We are indebted to Parke-Davis & Co. for the pitressin used in these experiments.

From the Department of Nervous and Mental Diseases, Northwestern University Medical School and the Elgin State Hospital.

sponse, and at times a lowering of blood pressure, was also observed in the normal subjects and in the patients with epilepsy. In manic-depressive psychosis, however, there was a rise of about 20 mm. of mercury systolic and diastolic and a lowering of the blood pressure was not observed. The effect on the pulse rate was also similar in schizophrenics, normal subjects and epileptics. In each group there were equal instances of a rise, diminution or no change in the pulse rate. In the patients with manic-depressive psychosis, the pulse rate was always lowered. Blood sugar curves were obtained only in dementia praecox and in manic-depressive psychosis. In each group there was more often a hyperglycemic response and in a few instances no change.

The most striking response to pitressin observed was the severe intestinal cramps, intense desire for defecation and successful expulsion of the contents of the colon in each of the normal subjects a few minutes after the injection of pitressin. The patients with schizophrenia neither complained of intestinal cramps nor was distress indicated in their facial expressions. The contents of the colon were not expelled for many hours after the injection. In the patients with epilepsy and manic-depressive psychosis we failed to make observation for this effect of pitressin. In view of this important finding on the failure of pitressin to cause peristalsis in dementia praecox, the problem will be studied on a larger scale with the aid of x-rays and kymographic tracings. Prostigmine will also be used.

The failure of pitressin in causing motility of the colon is of interest in view of the report by Henry of decreased motility and retention of barium in the colon in acute schizophrenia. He interprets this as due to predominance of the sympathetic division with a cessation of activity of the parasympathetic and, therefore, an inhibition of digestive processes.

303 E. Chicago Ave.

750 So. State, Elgin, Ill.

303 E. Chicago Ave.

750 So. State, Elgin, Ill.

REFERENCES

Henry, Geo. W.: *Gastrointestinal Motor Functions In Schizophrenia*, Assn. for Research in Nervous and Mental Diseases, 5: 280, 1928. (Paul B. Hoeber, Inc.)

ENDEMIC TYPHUS FEVER

SAMUEL J. LANG, M. D.*

and PAUL K. BOYER, M. D.**

EVANSTON, ILLINOIS

Endemic typhus fever has been recognized in parts of the United States for many years. Since first observed by Brill in New York in 1897, it has been known to be present along the southern and eastern seacoasts from the Mexican border to New England. In central and western United States it has been and continues to be a relatively rare disease. Its occasional occurrence however, necessitates its consideration in certain cases of otherwise unexplained fever.

Endemic or New World typhus is not to be confused with epidemic or Old World typhus fever. The latter is an ancient disease, highly infectious and associated with a high mortality rate. It thrives in filthy, overcrowded surroundings and is transmitted by the human body louse. On the other hand, endemic typhus fever is usually mild, associated with a low mortality rate and is thought to be transmitted to man from a rodent reservoir by the rat flea.¹ The diagnosis of epidemic typhus fever during an outbreak offers no difficulty. Endemic typhus occurring in its usual localities is also generally recognized, but when it appears in regions where it rarely occurs, as it may when individuals are travelling across the country from prevalent to non-prevalent areas, it leads to complications in the usual diagnostic procedures.

CASE

Miss L. G., a twenty-one year old university student, was admitted to the Evanston Hospital on January 6, 1938, and discharged on January 22, 1938. She had been perfectly well until two days before entering the hospital when her illness began. Her complaints on admission were fever, generalized aching particularly of the extremities and back with headache and malaise. The past history, family history and social history were essentially negative except for a trip to Florida during the Christmas holidays.

Physical examination revealed a well-nourished, well-developed girl with a flushed face, slightly reddened throat and a short systolic murmur at the apex. All findings were otherwise normal except for a temperature of 101.4° F., and a pulse of 94. The urinalysis

From the department of Medicine of the Evanston Hospital and the Northwestern University Medical School.

*Associate in Medicine at Northwestern University Medical School.

**Fellow in Medicine at Northwestern University Medical School.

was negative, the leucocyte count 8,500 and the red cell count normal. A tentative diagnosis of an influenza type infection was made giving consideration to the possibility of acute rheumatic fever, undulant fever and rheumatoid arthritis.

For the first two hospital days the patient was treated symptomatically after which all discomfort disappeared. After having dropped to normal on the second day, the temperature began a step-like rise, reaching 103.8° F., on the sixth hospital day, the pulse remaining relatively slow, 90 to 100. Physical findings continued to remain essentially negative.

During this period blood cultures, agglutination tests for typhoid, paratyphoid, undulant fever and tularemia were negative. No malarial parasites could be found on several examinations. The red-cell count, hemoglobin, leucocyte count and differential remained within normal limits. Roentgenograms of the chest were negative as were the Kahn, formol gel and the Forsman heterophile antibody tests. The sedimentation rate was elevated to 32 mm. in 45 minutes.

On the tenth day of the illness, with the fever still 103° F., a rash was first noted on the upper abdomen, macular in type and not associated with itching. The lesions were small, 1 to 3 mm., discrete and reddish in color and were scattered over the abdomen, chest, neck, back and the medial surfaces of the upper extremities and thighs.

The appearance of a rash late in the course of the fever suggested the consideration of illnesses in which a rash appears several days after the onset of the fever. Because of the patient's recent visit to Florida, diseases prevalent along the southeastern seacoast and rare in this part of the country such as dengue, typhus and Rocky Mountain spotted fever were included in the differential diagnosis. A Weil-Fleix agglutination titre with proteus X 19 was found to be positive in a dilution of one to 1,280, the highest titre set up by the bacteriologist at that time. The test was repeated at the Northwestern University Medical School where the agglutination titre proved positive with proteus X 19 in titre of one to 5,120, with proteus OXK in one to 2,560 and with proteus OX 19 one to 2,560. When repeated one month later, these titres were found to be the same. Dr. A. A. Day² of the bacteriology department was of the opinion that agglutination in such high titres was unusual and signified typhus rather than spotted fever.

Within three or four days the rash had disappeared; the temperature gradually returned to normal and on the nineteenth day of her illness, the patient was discharged with a diagnosis of endemic typhus fever.

DISCUSSION

Within the past two years no other case of typhus fever has been reported to the Illinois State Health Department.³ It is of interest to note that prior to 1936 several cases of typhus fever but practically no cases of Rocky Mountain spotted fever had been reported annually. Con-

versely, since 1936, several cases of the latter and none of the former have been reported. Due to the similarity of the two diseases, it appears that what had formerly been called typhus fever may in reality have been spotted fever, and it suggests that the incidence of typhus in Illinois is less than that indicated by statistics. These two Rickettsia diseases are much alike in onset and course but certain essential clinical differences have been carefully described by Rumreich⁴ and others. In general, the fever, symptoms and mortality of spotted fever are more severe. In both diseases the rash appears on or about the fifth day, tending to appear earlier in spotted fever. In typhus the rash is most prominent on the lower chest and upper surfaces of the arms and thighs; the palms, soles and face are rarely involved. In spotted fever the rash is first noticed and is most prominent on the wrists and ankles, spreading in centripetal fashion and may become generalized. Unlike typhus, the palms and soles are usually and the face frequently involved.

The Weil-Felix titre with proteus X 19 is positive in both diseases but most authorities agree that the higher titres are found only in typhus fever. According to Topley and Wilson⁵ the Weil-Felix titre in Rocky Mountain spotted fever is often weakly positive, and proteus OX 2 and OXK are also sometimes agglutinated in low titre. On the basis of experience in many parts of the world, Zinsser and Bayne-Jones⁶ believe that in true typhus fever the patient's serum develops an agglutination titre of from 1:100 to 1:200 by the end of the first week and that there is a gradual rise of the titre throughout the febrile period. In the most pronounced cases the titre may rise to 1:5000 although such high titres are relatively rare. Zinsser also believes that the titre in Rocky Mountain spotted fever does not go as high as it usually does in typhus. Gay et al⁷ have found that the serum of typhus cases often agglutinates in titres of 1:2500 between the eighth and the twenty-first days of the illness.

Cross immunity tests using guinea pigs can be made to conclude the differentiation between typhus and spotted fever since immunization of a guinea pig against one of the diseases does not protect against the other. In the described case this method was not used as the characteristic rash and the diagnostic high titre of the Weil-

Felix reaction appeared to be conclusive. By communicating with the Florida State Health Department, we found that they had encountered no cases of Rocky Mountain spotted fever during the past two years, whereas typhus fever had been occurring fairly frequently, ten cases having been reported in December 1937 and January 1938 which coincided with the patient's visit to Florida.

CONCLUSIONS

A case of endemic typhus fever is presented as an unusual cause of unexplained fever which could not be diagnosed by the ordinary laboratory procedures. Only later in the course of the disease when the rash appeared was the diagnosis of endemic typhus fever made possible.

636 Church Street.

REFERENCES

1. Maxcy, Kenneth F.: An Epidemiological Study of Endemic Typhus (Brill's Disease) in the Southeastern United States with Special Reference to its Mode of Transmission, Pub. Health Rep. U. S. P. H. Ser. 41: 52, 2967, 1926.
2. Day, Alex A.: Personal communication.
3. McShane, John J.: State Epidemiologist, Illinois State Health Dept., Personal communication.
4. Rumreich, Adolf S.: The Typhus and Rocky Mountain Spotted Fever Group, J. A. M. A. 10: 331-334, 1933.
5. Topley and Wilson: Principles of Bacteriology and Immunology, 1454-1470.
6. Zinsser and Bayne-Jones: Textbook of Bacteriology, 744-781.
7. Gay et al: Agents of Disease and Host Resistance, 1157.
8. Dyer, R. E.: Canad. Pub. Health Jour. 28: 1-9, Jan. 1937.

THE PRACTICAL SIGNIFICANCE OF GROSS RECTAL BLEEDING

MORTIMER DIAMOND, M.D.
CHICAGO

Rectal bleeding is one of the more common complaints which general practitioners treat, yet it is a well-known fact that many of them take very little interest in the problem. Why is this so? Why are these physicians sufficiently interested in such symptoms as precordial pain, epigastric distress, sterility, hemoptysis and what not, to carefully study them, but not in rectal bleeding which therefore is neglected? Surely the symptoms are of equal importance to the patients and the patient with rectal bleeding is entitled to as much consideration and study as are the others.

When a patient tells you he has vomited blood you do not look at his face or place a finger in his mouth and blindly try to make a diagnosis. That is stupid and very unscientific, but precisely the method used by many physicians in trying to find the cause of rectal bleeding. The patient assumes a knee-elbow position, the physician looks at the anus, perhaps finds an innocent skin tag, places a finger in the rectum and tries to feel an internal hemorrhoid which can't be felt. He isn't certain as to what he palpates and for want of a better diagnosis tells the patient he has "piles," prescribes mineral oil and suppositories and believes he has helped the patient. This negligent type of practice and the blind prescribing of local medicaments may lead to serious results and are to be condemned.

Just as the diagnosis of hematemesis entails obtaining a careful history, carefully examining the patient, having the gastric contents and the stools examined, taking gastrointestinal x-rays, and having gastroscopy performed; so to find the cause of rectal bleeding a physician must take a history of the complaints, thoroughly examine the patient and make a complete proctologic study. The latter includes proctosigmoidoscopy, examination of the stool and any rectal discharge, and x-raying the colon. The diagnosis cannot be properly made by any other method.

In the majority of cases gross blood that is passed per anum originates in pathological changes of the perianal region or lower alimentary canal. Occasionally its source is in the upper gastrointestinal tract. Urinary and genital hemorrhage cause confusion at times, but are easily differentiated by tamponing the urethral and vaginal orifices.

Rectal bleeding is a sign of a large number of conditions. Usually it signifies a benign lesion, but it also evidences a malignant one. Often the two coexist just a few inches apart. If this fact isn't kept in mind the malignancy beyond the reach of the finger will be missed unless a sigmoidoscopy is done. Only too frequently patients undergo hemorrhoidectomy while a carcinoma of the rectum or rectosigmoid which has been overlooked is permitted to progress from an operable to an inoperable stage.

To avoid this grave error, it is incumbent upon the physician to see that every patient with rectal bleeding receives a complete proctologic examination, which is not considered complete until

From the Proctologic Division of the Surgical Dispensary, Mount Sinai Hospital, Chicago, Illinois.

two questions are answered. These questions are: (1) what is the source of the bleeding, and (2) is a malignancy present.

There are three essentials to the proper diagnosis of gross rectal bleeding. These are (1) A knowledge of the anatomy of the anal canal and rectum; (2) A careful history, and (3) A general physical examination and a complete proctologic study. Briefly, the important anatomical markings are these: The perianal skin converges at the anus and continues as the lining of the anal canal. At Hilton's White Line the epithelium becomes transitional in type. Hilton's White Line is a linear depression which can be felt between the subcutaneous portion of the external sphincter and the internal sphincter, about half an inch proximal to the anus. Through the anoscope this depression appears whitish in color due to the connective tissue separating the sphincters and shining through the lining of the anal canal.

The juncture of the anal canal with the rectum is marked by the pectinate line and insertion of the levator ani muscle. The area between Hilton's White Line and the pectinate line is 6—9 mm. wide and was named the "Pecten" by Stroud¹ in 1896 from the resemblance to a comb. This is the site of the condition known as "Pectenosis."

The subcutaneous portion of the external sphincter muscle encases the distal portion of the anal canal, being on a plane with the internal sphincter which encircles the proximal portion of the canal. The latter is a continuation of the circular muscular coat of the rectum and is encased by the deep portion of the external sphincter. The longitudinal or external muscular coat of the rectum ends opposite the pectinate line in a fibromuscular septum which runs between the sphincters to be inserted into the lining of the anal canal.

Due to the purse-string action of the sphincters the rectal mucosa is thrown into vertical folds called columns of Morgagni. Their apices are at the pectinate line where each has a tiny mucosal projection called the "anal papilla." Between each column of Morgagni a small semi-lunar fold of mucosa is present. This is an anal valve, behind which is a small depression known as an anal crypt. Hellwig² has shown that a small duct opens into the majority of these crypts.

The rectum is divided by three valves—the

rectal valves of Houston. The superior one is on the left, the middle one on the right and the inferior one on the left. These are capable of contracting and narrowing the rectal lumen. Similarly, a sphincteric mechanism exists at the rectosigmoidal juncture. This is known as O'Beirne's sphincter.

The pectinate line is an important landmark. Above it the blood supply is furnished by the superior hemorrhoidal artery and the middle hemorrhoidal arteries. Below it by the inferior hemorrhoidal arteries. Internal hemorrhoids originate above the pectinate line and external hemorrhoids below it.

The innervation is sympathetic above and cerebrospinal (S2, 3, 4, 5) below the line. Therefore, the ordinary pain sense is absent above the pectinate line and pain is less prominent clinically in lesions located there.

The second essential in the diagnosis of rectal bleeding is the history which is important because the details of the bleeding and the associated symptoms often point to the location of the lesion or the causative lesion itself.

What are the characteristics of gross rectal hemorrhage? The bleeding is either external or internal, mild or severe, and independent or associated with defecation, straining, or instrumentation. The blood is bright or dark red, mixed with the feces, found on the stool, paper, instrument, or underclothing, or in the water. Generally, the brighter red the blood is the lower its origin, and the darker, the higher its source. However, blood from a severely bleeding high lesion as a peptic ulcer, might be red when passed, while retained blood originating in the sigmoid can turn dark before being eliminated.

The associated symptoms include: pain, burning, itching, swelling, protrusion, prolapse, discharge, urgency and frequency of defecation, change in bowel habit, constipation, diarrhea, loss of weight, fever, anemia and leucocytosis.

The third essential—the proctologic examination—is the most important procedure in the diagnosis of rectal bleeding because it permits visualization and differentiation of the lesions.

It is much easier to obtain a history when one has some classification on which to base the questions. The anatomic position of the lesion is a practical means of classifying the various pathologic entities which cause rectal bleeding. This divides the lesions into five groups each of which

has in a general way its own type of bleeding and associated symptoms.

These groups are (1) the Perianal, (2) the Anal Canal, (3) the Pectinate, (4) the Rectal, and (5) the Colon.

Bleeding in the perianal group of lesions (Chart I) is external, bright red, and usually small in amount. Generally it is independent of bowel movement, developing in the course of some pathologic process or trauma. The blood is found on the paper, undergarment, or instrument, and occasionally on the stool or in the water. Pain and itching are concomitant symptoms.

CHART I

ANATOMIC CLASSIFICATION OF GROSS RECTAL BLEEDING

Group 1. Perianal Lesions.

Bleeding—Independent of Defecation; External.

Blood—Bright red; Small amount found on finger, Tissue, Garment.

Pain—Independent of Defecation.

Lesions 1. Thrombosed External Hemorrhoid ulcerated through skin tag.

2. Anal verge varicosity.

3. Pruritus ani.

4. Perianal abscess.

5. Perianal fistula.

6. Perianal wart.

7. Perianal ulceration.

8. Perianal wound.

9. Perianal surgical procedure.

The commonest perianal lesion is the external hemorrhoid, which does not bleed unless some complication develops. The most frequent complication is thrombosis, which may be followed by ulceration of the raised overlying skin tag. Then, with spontaneous extrusion of the clot, hemorrhage usually slight, but occasionally more severe, may result. Pain developing with the onset of the thrombosis disappears with extrusion of the clot. The diagnosis is made by inspection which reveals the external hemorrhoids and the ulcerated, bleeding skin tag beneath which a portion of the thrombus may be still present.

An anal verge varicosity bleeds only when an overlying fissure or ulcer extends or is torn into it, as can happen during straining or instrumentation. The bleeding may be profuse, defecation is painful, and examination discloses a tightly contracted anal sphincter, and the fissure at the base of which is the bleeding varicosity.

In pruritus ani bleeding is insignificant and the result of scratching the pruritic skin. The blood is found on the finger, paper or undergarment, and the diagnosis is made by observing the bleeding points in the fissured, denuded,

excoriated, thickened, often weeping perianal skin.

External bleeding from a perianal abscess or an anorectal fistula is unimportant and appears when the abscess ruptures through the skin or is traumatized by instrumentation. Constant, increasing pain and swelling in the perianal region are the outstanding symptoms and are relieved by the discharge of the pus, which, mixed with a small amount of blood is seen coming from the external opening.

A perianal wart or ulceration bleeds when traumatized, and the hemorrhage from a perianal wound or surgical procedure does not present any diagnostic difficulty.

The next group of lesions are in the anal canal (Chart II) and differ from the perianal entities mainly in one respect—they bleed during bowel movement. Little blood is lost because the anal canal is closed immediately after defecation. Pain is prominent and more closely associated with bowel movement than in the perianal group.

CHART II

ANATOMIC CLASSIFICATION OF GROSS RECTAL BLEEDING

Group 11. Anal Canal Lesions.

Bleeding—Associated with defecation; external.

Blood—Bright red; Small amount, Found on feces, Tissue.

Pain—Prominent. Associated with defecation.

Lesions 1. Tear of normal lining of anal canal.

2. Tear of friable lining of anal canal.

3. Prolapsed anal mucosa.

4. Fissure in ano.

5. Stricture.

6. Epithelioma.

The forceful passage of a large, hard, rough stool may tear normal mucosa lining the anal canal to give pain and slight bleeding. The tear is easily detected through the anoscope. Similarly, foreign bodies and instrumentation may cause bleeding, which bowel movement aggravates by reopening the wounds.

As a result of infection or a chronic discharge the lining of the anal canal becomes friable and is easily traumatized during defecation or instrumentation. The bleeding that results is slight and the examination reveals the tear in the friable bleeding mucosa. In some cases varicosities are present and when these are involved by the trauma the hemorrhage is larger. The diagnosis is made by the presence of the bluish varicosities bleeding through the torn, friable mucosa of the anal canal.

The mucosa of the anal canal may become stretched by a subcutaneous hematoma or throm-

bus of an underlying varicosity. This stretched, redundant mucosa may prolapse through the anal canal, become friable and denuded, and will bleed if traumatized by stool or friction. The bleeding, eroded, or ulcerated, prolapsed mucosa is easily found on inspection.

The outstanding symptoms of an anal fissure is sharp pain during bowel movement, while bleeding usually is slight. The blood often streaks the stool. A sphincter spasm arouses suspicion of its presence and finding the ulcer with its sentinel pile makes the diagnosis.

About two per cent.³ of the malignant growths in the lower 24 cm. of the bowel are in the anal canal. While excruciating pain is the most prominent symptom of an anal canal epithelioma, slight bleeding does occur with defecation and is the result of necrosis and trauma. The lesion may closely resemble a benign fissure but is differentiated by being somewhat fixed and indurated. Biopsy verifies the diagnosis.

The third group of lesions are in the pectinate zone (Chart III), duplicate the hemorrhage of the anal canal entities, and in addition bleed internally. Pain, burning, and itching accompany this group.

CHART III

ANATOMIC CLASSIFICATION OF GROSS RECTAL BLEEDING

Group III. Pectinate Lesions.

Duplicates Anal Canal Group in

Bleeding—Associated with Defecation.

Blood—Bright Red; Small Amount Found on Feces, Tissue.

Differs from Anal Canal Group in

Bleeding—Internally and Externally.

Pain—Less prominent.

Burning and itching with B. M.

Lesions 1. Cryptitis.

2. Papillitis.

3. Infected internal blind sinus.

4. Internal rupture of perirectal abscess.

5. Tuft of granulation tissue.

6. Stricture.

7. Torn anal valve.

Bleeding in cryptitis accompanies defecation, is slight and the result of trauma to be congested or eroded crypts. Burning and itching are frequently present, and the tender crypts appear injected, eroded, or ulcerated when viewed through the proctoscope.

Papillitis is often associated with cryptitis and produces identical symptoms. Trauma during defecation causes the swollen, injected and congested papillae to bleed. On palpation they are indurated, tender and enlarged, and through the proctoscope may be seen plastered down over

adjacent inflamed crypts. Hypertrophic papillae may prolapse through the anal canal.

The mucosa surrounding the opening of an infected internal blind sinus is usually injected, and may bleed slightly when traumatized during defecation or instrumentation. The sinus is tender, and through the proctoscope one sees the injected, eroded mucosa around its opening from which pus may escape and into which a hook falls very easily. Pain, burning, soreness and itching are associated symptoms.

Bleeding occurs when a perirectal or perianal abscess ruptures internally, and usually is masked by a purulent discharge. The constant severe pain is alleviated, and the internal opening is found in a crypt.

In chronic, deep, inadequately draining abscesses and in fistulae a tuft of granulation tissue may form in the internal opening. This is very friable and bleeds very easily.

An obstructing, postoperative stricture may involve the anal canal, pectinate zone, or lower rectum, and will bleed if torn by instrumentation or defecation. Bleeding is external from an anal canal stricture and internal from the rectal and pectinate strictures. However, in the latter, bleeding can be external when the sphincters are incompetent. Frequently, bleeding is severe and immediate measures must be taken to prevent serious loss of blood.

Bleeding from a torn anal valve usually is mild but may be severe, collect in the rectum, and be passed as a clot with or without bowel movement.

The largest group of lesions causing hemorrhage are in the rectum (Chart IV) and present all of the characteristics of bleeding. Pain is less prominent in this group than in the pectinate, anal canal, and perianal types.

CHART IV

ANATOMIC CLASSIFICATION OF GROSS RECTAL BLEEDING

Group IV. Rectal Lesions.

This is the largest group. Bleeding is associated with defecation and presents all the characteristics of rectal hemorrhage.

Pain—Not prominent.

Tenesmus—Frequent.

Lesions:

- | | |
|------------------------------|-------------------|
| 1. Internal Hemorrhoid | 11. Worms |
| 2. Prolapsed Int. Hemorrhoid | 12. Carcinoma |
| 3. Proctitis | 13. Adenoma |
| 4. Prolapsed Rectal Mucosa | 14. Lipoma |
| 5. Procidentia Recti | 15. Papilloma |
| 6. Active Inflamm. Stricture | 16. Angioma |
| 7. Healed Fibrous Stricture | 17. Polypoidosis |
| 8. Rectal Ulceration | 18. Hypert. T. B. |
| 9. Rectal Injury | 19. Adenomyoma |
| 10. Foreign Body | 20. Prostate Ca. |

The internal hemorrhoid is the commonest pathologic entity of the rectum. It is the most frequent cause of rectal hemorrhage, bleeding in 90 per cent. of the cases. At first, the patient discovers a small amount of bright red blood on the stool or paper, which through the proctoscope is seen to come from the eroded, ulcerated or traumatized, friable mucosa covering the hemorrhoidal varicosity. With ulceration into the venous spaces, the bleeding becomes more profuse, at times continuing after defecation to be passed later as a blood clot. Diarrhea, constipation, and straining aggravate the bleeding.

Prolapse of the internal hemorrhoid leads to further vascular disturbance, more erosion and ulceration, and more bleeding, which usually ceases soon after it is returned into the rectum.

The bleeding in proctitis usually is slight unless associated with a colitis, and through the proctoscope is seen to be due to mucosal erosion or injury to the mucosal vessels. The patient complains of heaviness in the rectum with tenesmus, urgency and frequency of defecation.

In prolapse of the rectal mucosa and in procidentia recti bleeding is usually slight coming from erosions, ulcerations, or traumatic lesions of the mucosa, and ceases soon after reduction.

The bleeding associated with an active, inflammatory rectal stricture is part of mucopurulent discharge and somewhat dark in color. Healed fibrous rectal strictures bleed only when traumatized in which case bright red blood is passed.

Bleeding from rectal ulceration is dependent upon the number of vessels involved and the amount of damage to them. The blood may be passed with stool or as part of a purulent discharge which may be present. Through the sigmoidoscope one may see that the ulcerative process in the rectum is part of a similar one involving the colon.

The hemorrhage from rectal injuries varies with the type and extent of the wounds. Blood that collects in the rectum is eliminated immediately or after some delay. If the peritoneum is opened bleeding occurs into the peritoneal cavity. Similarly, hemorrhage may take place into the bladder, vagina and other organs. Many wounds are easily seen through the proctoscope, but some can only be found by laparotomy.

The bleeding from foreign bodies in the rectum

is traumatic, and often more difficulty is encountered in treatment than in diagnosis.

When worms cause bleeding they do so by traumatizing the mucosa. Usually they are scattered throughout the colon, being especially numerous in the cecum. Therefore, bleeding which may be diffuse is more marked proximally where the blood can easily mix with the stool. The worms may be seen on the stool or through the sigmoidoscope on the eroded mucosa.

Carcinoma of the rectum is not the most frequent but the most important cause of rectal bleeding due to its seriousness. Bleeding is not only its commonest sign, being present in 90 per cent of the cases, but also its initial sign 33 per cent of the time.⁴ A small amount of blood may be passed with the stool or an alarming hemorrhage may ensue. Irregularity of bowel habit, pain and blood in the stools should arouse suspicion of its presence, and the diagnosis is made by finding the fixed, indurated, somewhat tender, friable tumor mass that often is centrally necrotic and ulcerated, and bleeds upon the slightest trauma. Biopsy verifies the diagnosis. Eighty per cent of the carcinomas are within finger reach and an additional number can be seen through the sigmoidoscope. Thus the importance of a complete proctologic examination in rectal bleeding becomes clearly evident.

In the group of benign and rare tumors of the rectum are four with the tendency to bleed. The adenoma, which originates in a gland of Lieberkuhn is the commonest and the most important because it frequently undergoes malignant degeneration. It constitutes sixty-three⁵ to eighty⁶ per cent of the tumors of the rectum and may or may not cause symptoms. Bleeding with defecation is its most frequent sign resulting from ulceration, trauma and malignant degeneration. The loss of blood usually is slight, spotting the stool, but may be moderate with prolapse, and alarming with spontaneous amputation of the adenoma.⁷ On proctoscopic examination one finds the sessile or pedunculated, grapelike, pink to dark red, ulcerated or bleeding tumor.

The second most common benign tumor is the lipoma which arises from the subserosa or submucosa. It, too, may be symptomless, but bleeding is a frequent and often initial sign incident to ulceration of the overlying mucosa or tumor itself. Through the proctoscope one may see the ulcerated, elevated mucosa, or the sessile or

pedunculated, lobulated, rounded, or ovoid tumor that is ulcerated when bleeding is present.

The third tumor, the papilloma, is rare and originates in the intestinal mucosa in a crypt of Lieberkuhn. Its outstanding symptom is bleeding, though large growths may be accompanied by tenesmus and the frequent discharge of mucus. The tumor is sessile, being composed of many closely set villi that show ulcerations.

The fourth tumor, the angioma, is one of the rarest tumors of the rectum. It apparently is congenital arising from the submucosa. Ulcerations may lead to fatal hemorrhage and the diagnosis is made by the proctoscopic finding of a purplish tumefaction often surrounded by small areas resembling nevi.

The multiple adenomas of polyposis of the rectum bleed when they are ulcerated, traumatized, or undergo malignant degeneration, and present little diagnostic difficulty. The patient complains of bleeding with defecation or often, frequent bloody mucoid discharges. The numerous grapelike growths of varied size, shape, and color seen through the proctoscope can't be confused with anything else.

When bleeding is present in hypertrophic tuberculosis of the rectum it usually is slight and due to ulceration of the covering mucosa. The lesion simulates a carcinoma and biopsy is necessary for differentiation.

An adenomyoma of the rectovaginal septum that has ulcerated through the rectal wall bleeds during the menstrual period. Constipation is a concomitant symptom. The ulcerated, bleeding mass in the rectovaginal septum is moderately fixed and differentiated from carcinoma by biopsy.

Rectal bleeding from a prostate carcinoma that has extended through the rectal mucosa is due to ulceration and trauma. Urinary symptoms usually precede the rectal bleeding, and the diagnosis is made by finding the extra rectal mass fixed to the prostate and ulcerated into the rectum. Biopsy substantiates the diagnosis.

There are two outstanding characteristics of bleeding associated with pathological findings in the colon (Chart V) namely: (1) the hemorrhage is internal, and (2) the blood is mixed with the stool. Diarrhea is frequently present and cramps due to spasms of the colon may be very severe.

CHART V ANATOMIC CLASSIFICATION OF GROSS RECTAL BLEEDING

Group V. Colon Lesions.

Bleeding is internal.

Blood is bright or dark red, mixed with the feces and often passed as part of a mucopurulent discharge.

Diarrhea and cramps frequent.

Lesions 1. Acute Bacillary dysentery.

2. Amoebic dysentery.

3. Chronic Thrombo-Ulc. colitis.

4. Tuberculous colitis.

5. Diverticulitis.

6. Intussusception.

7. Carcinoma of left colon.

8. Carcinoma of right colon.

9. Metallic poisoning.

10. Non-specific granulomatous colitis.

Blood forms a conspicuous part of the mucopurulent discharge seen in acute bacillary dysentery. At the onset it is bright red because the colon is emptied at frequent intervals. Later, as the number of discharges lessen, it becomes darker, and with healing, gradually disappears. The feces are liquid and mixed with the discharge. Toxemia often is marked and diarrhea, cramps and tenesmus are prominent. The mucosa as seen through the sigmoidoscope is intensely injected and covered with innumerable, pinpoint to a few millimeters in diameter ulcerations with hemorrhagic and purulent bases, and the slightest trauma produces severe bleeding. Culture and agglutination tests identify the causative organism.

In general, there is less blood in the discharges of amoebic dysentery than in bacillary dysentery. The toxemia, too, is usually milder. Viewed through the sigmoidoscope, the typical mucosal ulcers are buttonhole or umbilicated being circular or elliptical, 5 to 10 mm. in diameter with sides elevated up to 2 mm. and bases yellowish and necrotic. The mucosa between the ulcers is usually quite normal. The amoebae or cysts are found in the stool, discharge or smear from the base of the ulcer.

Chronic ulcerative colitis is characterized by a bloody mucopurulent discharge and diarrhea. Through the sigmoidoscope one sees that the mucosal picture varies with the stage of the disease. Early it is granular, injected, and covered with innumerable pinpoint to pinhead sized hemorrhagic ulcerations in between which are minute mucosal abscesses. Later, larger, irregular ulcers and small steelate scars may be present.

In tuberculous colitis bleeding is mild and often occult. Diarrhea may be present and the patient has an advanced pulmonary tuberculosis.

Sigmoidoscopically, the ulcers are a few millimeters to several centimeters in diameter, irregular, and have slightly raised, reddened, and often undermined edges. Their bases are covered with yellow pyogenic membranes beneath which tuberculous granulation tissue is found. The mucosa may present vascular changes.

Rectal bleeding is present in a small number of the cases of diverticulitis. Usually it is mild and due to fecal traumatization of the congested mucosa in the region of the diverticula. The history of left lower quadrant pain, constipation and a mass in the region of the sigmoid point to the diagnosis which is confirmed by sigmoidoscopy and x-ray examination.

Bleeding is of diagnostic importance in intussusception, usually appearing within 12 hours following the onset of the severe cramps and shock which seize the child. The bleeding results from venous congestion and necrosis due to interference with circulation, and the blood is passed alone or with some mucus. The history and presence of a tumor suggest the diagnosis and the intussusception may be seen through the sigmoidoscope.

In carcinoma of the left side of the colon, bleeding is prominent due to the firm character of the intestinal content. Often the blood is bright red and found on the stool. Symptoms of obstruction are early in appearance and the sigmoidoscopic or x-ray demonstration of the single, fixed, indurated, often ulcerated mass with a necrotic center makes the diagnosis which biopsy confirms.

In carcinoma of the right side of the colon bleeding is usually slight and occult, gross hemorrhage being rare and dependent upon ulceration. Dyspeptic symptoms, change in bowel habit, anemia and a mass in the right side of the abdomen suggest the condition which is confirmed by x-ray, exploratory, and biopsy.

In metallic poisoning the amount of bleeding depends upon the severity of the damage and extent of the erosions and ulcerations in the mucosa. Bright red and dark blood is passed with mucus and diarrheal stools. The severe nausea, vomiting, cramps, and prostration, point to the diagnosis which chemical tests prove.

Colitis of the right side of the large bowel is found in approximately five per cent of the cases of non-specific granulomas of the ileocecal region.⁸ In this disease the loss of blood in the stool is insignificant and occult, the important

symptoms being diarrhea, abdominal pain, fever and mass formation. X-ray examination and laparotomy make the diagnosis.

Bleeding is associated with the following conditions which are not in the scope of this discussion, but are included for completeness: carcinoma of the small bowel, typhoid fever, tuberculous enteritis, small bowel injuries, ectopic gastric mucosa, mesenteric thrombosis or embolism, peptic ulcers of the duodenum and stomach, carcinoma of the stomach, gastritis, rupture of an aneurysm into the stomach or esophagus, carcinoma of the esophagus, swallowed blood, pellagra, chronic heart disease with portal congestion, chronic interstitial nephritis with uremia, severe secondary anemia, leukemias, purpura hemorrhagica, pernicious anemia, and septic infection of the umbilical cord in infants.

Summarizing, in the majority of cases, gross blood that is passed per anum originates in lesions of the perianal region or lower alimentary canal. For practical purposes these pathologic entities are classified according to their anatomic positions. Therefore, the following groups are differentiated each having its own general type of bleeding and associated symptoms: the perianal, with external bleeding generally independent of bowel movement; the anal canal, with a small amount of external bleeding associated with defecation; the pectinate, with external bleeding associated with bowel movement and in addition internal bleeding; the rectal in which the bleeding presents all the characteristics of hemorrhage per anum and in which pain is less prominent than in the preceding groups; and last, the colon, in which the bleeding is internal, the blood is mixed with the stool, and diarrhea is frequently present.

Finally, one should remember that the investigation of rectal bleeding demands a complete proctologic examination to find the source of the hemorrhage and to determine the presence or absence of a malignancy.

REFERENCES

1. Stroud, Bert, B.: On the Anatomy of the Anus, *Annals of Surgery*. 24: 1, 1896.
2. Tucker, C. C. and Hellwig, A.: Anal Ducts, Comparative and Developmental Histology, *Arch. Surg.* 31: 521, 1935.
3. Buie, Louis A., and Brust, John C. M.: Malignant Anal Lesions of Epithelial Origin. *Jour. Lancet* 53: 565, 1933.
4. Rankin, Borgen, and Buie: *The Colon, Rectum, and Anus*, Philadelphia, W. B. Saunders Co. P. 528, 1935.
5. Erdmann and Morris: Polyposis of the Colon, *S. G. O.* 460, Sept., 1928.
6. Dewis, J. W.: A small fibroma of the ileum resulting in obstruction of the bowel, with a consideration of various forms of benign intestinal tumors. *Boston Med. and Surg. Jour.* 155: 427-433, 1906.

7. Diamond, Mortimer: Adenoma of the Rectum in Children, *Am. Jour. Dis. Child.* 56: 360, 1939.

8. Crohn, B. B.: Non-specific granulomatous lesions in and about the ileocecal region, *J. Med.* 19: 84-87, 1938.

58 East Washington Street.

HOT DOGS, COLLEGE AND DEPRESSION

Once there was a man who lived by the side of the road and sold hot dogs.

He was hard of hearing, so he had no radio. He had trouble with his eyes, so he read no newspapers. But he sold good hot dogs. He put signs up on the highway, telling how good they were. He stood on the side of the road and cried, "Buy a hot dog, Mister?" And the people bought.

He increased his meat and bun orders. He bought a bigger stove to take care of his trade. He finally had his son come home from college to help him.

But then something happened. His son said, "Father, haven't you been listening to the radio? Haven't you been reading the newspapers? There's a big depression on. The European situation is terrible. The domestic situation is worse. Everything's going to pot."

Whereupon the father thought, "Well, my son's been to college, he reads the papers, and he listens to the radio, and he ought to know." So the father put up no more advertising signs, cut down on his meat and bun orders, and no longer bothered to stand out on the highway to call his wares. And his hot dog sales fell off almost overnight.

"You're right son," the father said to the boy. "*We certainly are in a Great Depression.*"—Paul Talbot. Courtesy of United Business Service.

EXAMINATIONS

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, January 6, 1940, at 2:00 P. M. The Board announces that it will hold only one Group B, Part I, examination this year prior to the final general examination (Part II), instead of two as in former years. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held in June, 1940.

Applications for admission to Group B, Part I, examinations must be on file in the Secretary's office not later than October 4, 1939.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 8, 9, 10, and 11, 1940, immediately prior to the annual meeting of the American Medical Association in New York City.

Applications for admission to Group A, Part II examinations must be on file in the Secretary's office not later than March 15, 1940.

DURATION OF SMALLPOX IMMUNITY

In 1936 a study was made of smallpox immunity in 1,053 matriculating college students at Kansas State College. In September 1937 David T. Loy and M. W. Husband, Manhattan, Kan. (*Journal A. M. A.*, Aug. 27, 1938), made a similar investigation of 986 students with additional data on the duration of smallpox immunity and the effect of multiple vaccinations. In summary they state: 1. Of the students who matriculate at Kansas State College (a) approximately one-fourth have never been vaccinated against smallpox and (b) approximately two-thirds are in some degree susceptible to smallpox. 2. Only 5.9 per cent. of the 1937 group had been vaccinated more than once previously. 3. There are about 20 per cent more persons with complete immunity in the previously vaccinated one to five year group than in the group vaccinated from six to ten years previously. 4. There are about 20 per cent. more persons with complete immunity in the multiple previously vaccinated group than in the once previously vaccinated group. 5. The method of noncompulsory vaccination used has proved to be almost 100 per cent. acceptable to the student group.

MALE HORMONE AND DESCENT OF TESTES

Hamilton, J. B., *Anatomical Record*, April, 1938. Has seen cryptorchid testes of the immature macaque descend into the scrotum following adequate administration of testosterone acetate and testosterone propionate. There was less edema and scrotal swelling than in descent produced by gonadotropic substance. Processes considered largely responsible in the production of this descent are (1) growth and elongation of the elements of the cord and (2) slight development of the scrotum to form more of a pouch for the testes. Descent produced by anterior pituitary-like substances may be due in part to stimulation of the secretion of male hormone. Endocrine treatment may be of value in (1) producing descent in certain cryptorchid cases, (2) authorizing surgery at an early age instead of waiting until puberty to see whether spontaneous descent may occur and (3) aiding surgery preoperatively by the development of structures of the cord and postoperatively by preventing retraction and tension.

BUSINESS GIRL

The amiable old gent visiting a home was trying to win the favor of the small daughter. "I'll give you a nickel for a kiss," he said. "No, thank you," she replied sweetly. "I can make more money taking castor oil."—*Brotherhood Progress*.

Marriages

ABE R. EVELOFF, Springfield, Ill., to Miss Vivian Grebler at St. Louis, July 13.

THEODORE SIDNEY RALFORD to Miss Ann Irish, both of Decatur, Ill., June 20.

Personals

Dr. James J. Callahan, Chicago, discussed fractures before the Effingham County Medical Society in Effingham, June 13.

Arnold F. Emch, Ph.D., has resigned as executive director of the Chicago Hospital Council to become assistant secretary of the American Hospital Association.

Dr. Clement C. Clay, medical assistant to the director, University of Chicago Clinics, has resigned to become administrator of St. Barnabas Hospital, Minneapolis, succeeding Samuel W. Rice, resigned.

At a joint meeting of the Fulton and McDonough county medical societies in Bushnell June 20 Drs. James C. Redington and Frederic E. Hambrecht, Galesburg, spoke on "The Diagnosis of Pulmonary Tuberculosis" and "Surgical Treatment of Pulmonary Tuberculosis" respectively.

Sr. Surg. William H. Slaughter has been appointed medical officer in charge of the U. S. Marine Hospital, succeeding Dr. Mark J. White, who retired May 1. Dr. Slaughter comes from a similar post in New Orleans, where he was succeeded by Dr. Lionel E. Hooper, Honolulu.

At a meeting of the Madison County Medical Society in Alton August 4 the speakers were Drs. Isaac A. Abt, Chicago, on "Infant Feeding First Two Years"; John F. Carey, Joliet. "Treatment of the Sick Infant," and Franklin J. Corper, Chicago, "Respiratory Tract Infections in Children."

Dr. Herbert A. Potts, for many years professor of oral surgery at Northwestern University medical and dental schools, will retire from the dental school at the end of the academic year September 1, with the title of professor emeritus. Dr. Potts, who also has the degree of doctor of dental surgery, has been associated with Northwestern University Dental School since 1908, first as lecturer in anesthesia, assistant in oral surgery, professor of pathology, instructor in oral surgery, assistant professor and since 1921 professor of oral surgery. He received his degree in dentistry at Northwestern in 1895 and his medical degree in 1901. He retired from the medical school as professor emeritus June 30, 1938.

Dr. Morgan J. O'Connell has been invited to address the Rock Island County Maternal Wel-

fare Committee August 22, subject, "The Indications, Contraindications and Technique of Forceps Delivery."

Dr. C. C. Maher addressed before the Henry County Medical Society, August 24, on the subject of "Cardio Renal Disease."

Dr. Guy Cushing was invited to speak before the Henry County Medical Society, August 24, on the subject of "Acute, Perforating Gastric and Duodenal Ulcers."

Dr. Donald A. R. Morrison, formerly Rockefeller Fellow at the Pennsylvania Hospital for Mental and Nervous Diseases, and for the past two years instructor in Psychiatry at the University of Chicago Medical School, has joined the staff of the Rogers Memorial Sanitarium, Oconomowoc, Wis.

During the year ending April, 1939, 209 members of the Chicago Medical Society presented scientific papers before downstate county medical societies at the request of the Scientific Service Committee of the Illinois State Medical Society. Many others appeared who were not scheduled through the main office.

Franklin J. Corper and Isaac Abt presented a program on "Infections of the Respiratory Tract in Children" and "Infant Feeding" before the Madison County Medical Society, August 4.

News Notes

—There were 2,748 deliveries without a maternal death in the Chicago Lying-In Hospital of the University of Chicago during the fiscal year ended June 30. In 571 deliveries of the hospital's home service there was but one death.

—To determine the effectiveness of efforts toward the control of venereal diseases, a survey of all treatment sources is being planned in accordance with a request from Dr. Thomas Parran, surgeon general, U. S. Public Health Service, according to the Chicago Medical Society *Bulletin*. A campaign was begun throughout the state in June, 1937, to bring patients with syphilis under medical care.

—A survey course for persons actively engaged in the administration of hospitals will be offered evenings at University College, University of Chicago, during the autumn and winter, in cooperation with the American College of

Hospital Administrators. Among the lecturers will be: Drs. Robin C. Buerki, president of the college of hospital administrators; Bert W. Caldwell, executive secretary, American Hospital Association; Malcolm T. MacEachern, associate director, American College of Surgeons, and Herman Smith, medical superintendent of Michael Reese Hospital.

—The Institute of Medicine of Chicago offers again the Joseph A. Capps Prize of \$400 for the most meritorious investigation in medicine or in the specialties of medicine. Competition is open to graduates of medical schools in Chicago who have completed an internship or a year of laboratory work in 1937 or thereafter. The investigation may also be in the fundamental sciences provided the work has a definite bearing on a medical problem. Manuscripts must be submitted to the secretary of the institute, 86 East Randolph Street, Chicago, not later than December 31.

—State fair visitors were invited to have free blood tests made by the state department of health during the week of the fair, August 12-19. Code numbers were used instead of names in order to keep the results confidential. A special laboratory was established on the grounds and the visitors were invited to see the process and hear it explained by a lecturer. The department also conducted a "better babies conference" and presented numerous exhibits and demonstrations. Among the latter were an exhibit on pneumonia, models showing care of patients with contagious disease, a modern swimming pool and a giant tooth showing principles of dental hygiene.

—The cornerstone of the Neuropsychiatric Institute, University of Illinois College of Medicine, was laid with appropriate ceremonies recently. Addresses were delivered, among others by Arthur Cutts Willard, LL.D., president, University of Illinois; D. R. Kennicott, regional director, PWA; Dr. Richard H. Hutchings, Utica, N. Y., and Dr. Adolph Meyer, Baltimore. The cornerstone was laid by A. L. Bowen, director of the state department of public welfare, and the invocation given by Rev. Arthur E. Johnstone of the Episcopal City Missions. The building is expected to be ready for occupancy in the fall of 1940. More than \$500,000 of the approximate cost of \$1,300,000 has been supplied by PWA funds. The building, which will be

eleven stories high, will be used for teaching neurology and psychiatry and for research in these fields.

—The state department of health has issued a study of mortality trends from 1925 to 1939. The general death rate for 1925 was 11.5 per thousand of population and for 1938 it was 10.7. Infant mortality has steadily declined; in 1927 it was 61 per thousand live births and in 1938 it was 41. Deaths of mothers declined from 5.5 per thousand births in 1925 to 3.1 in 1938. Heart disease, cancer and diabetes have increased, but there are more persons in the population of an age to suffer these diseases. The rates from heart disease in 1925 and in 1938 were 186.9 and 313.5 per hundred thousand, respectively. Most of the increase occurred among persons of the higher age levels. Deaths from cancer rose, a rate of 102.2 per hundred thousand in 1925 to a rate of 136.4 in 1938. Diabetes increased from 19.7 to 27.6 per hundred thousand of population.

—A total of 505 patients representing twenty-two states, Canada, Cuba, South America and Spain were treated at the Chicago Tumor Institute during its first year of operation, according to its initial report recently released. Seventeen indigent patients were cared for without any referring physicians. There were 4,772 examinations made during the year: 1,299 x-ray diagnostic procedures and 1,975 treatments given with radium and 3,576 with x-ray. There were about twenty-five classifications of the types of cancer. Leading the list were: cancer of the breast, 104 cases; larynx, forty-three; cervix and uterus, twenty-six each, and tongue, twenty-three. The report acknowledges the arrangement with the veterans' hospital at Hines which has enabled the institute to utilize the clinical material at Hines to project special research on cancer of the larynx. The report emphasizes the need of an experimental laboratory to supplement the clinical investigations. Space is available but funds do not permit this activity. Another need of the institute is a library of current periodicals and monographs on cancer. During the year postgraduate instruction was given to about fifty specialists from all parts of the United States and from Hawaii, Cuba and South America. The teaching program of the institute is being developed on a comprehensive scale. The report classifies the program

as follows: one year fellowships or traineeships; visiting fellows (from one to six months); post-graduate instruction to radiologists (from one to three months); short annual courses (one week) and weekly cancer clinics for fourth year students at Northwestern University Medical School (ninety students). The Chicago Tumor Institute, opened in March, 1938, was chartered in Illinois, not for profit, to conduct research on the causes, diagnosis and treatment of cancer and to train cancer specialists. The institute has available 11 Gm. of radium, 10 Gm. of which is used in the form of a radium bomb. Dr. Max Cutler is director of the institute and Dr. Ludwig Hektoen is president of the board of trustees.

The McLean County Medical Society will hold a meeting at the Illinois Hotel, Bloomington, Illinois, on September 21. Dr. Rock Sleyster, President of the American Medical Association, will speak on "Medical Problems of the Day" and Dr. M. Herbert Barker of Northwestern University Medical School will speak on the subject of "Hypertension." Physicians of central Illinois are invited to attend this meeting and reservations for the dinner should be made with Dr. H. P. Sloan of Bloomington who is in charge of the arrangements.

Through a grant of \$3,000 from the Julius Rosenwald Fund to the University of Chicago, x-ray examinations of approximately 30,000 patients of the Provident Hospital Clinic will be made during the next year to ascertain the extent of unsuspected tuberculosis. Announcement of the grant was made yesterday by Frederic Woodward, Vice President of the University.

Investigations recently made at the University of Chicago indicate that tuberculosis of the lungs is being overlooked to a surprising degree. At least one and one-half per cent. of the supposedly healthy population of the United States have clinically significant tuberculosis of the lungs without any awareness of their condition, the University study indicates. General complacency over the conquest of tuberculosis, the investigations suggest, may not be entirely justified.

The fluoroscopic examination of a large group of patients through Provident Hospital Clinic will give sufficient statistical information for determination of the extent of unsuspected tuberculosis. All patients registered will be examined, and the families of all those found to have the disease also will be examined. The Rosenwald Fund gift will provide equipment for the examinations.

Deaths

HARRY HOMER DALLY, Chicago; Rush Medical College, Chicago, 1902; aged 60; died, May 20, in Kempton of cerebral hemorrhage.

HUGH JOHN DUFFY, Chicago; University of Illinois College of Medicine, Chicago, 1911; served during the World War; aged 50; on the staff of St. Francis Hospital, Evanston, Ill., where he died, May 8.

CHAUNCEY E. EHLE, Quincy, Ill.; Northwestern University Medical School, Chicago, 1895; member of the Illinois State Medical Society; superintendent of the Illinois Soldiers' and Sailors' Home and Hospital; died, May 23, in the Blessing Hospital.

THOMAS C. HAINLINE, Seaton, Ill.; Keokuk (Iowa) Medical College, 1897; age 81; died, May 19, of an injury received in a fall.

ARTHUR N. HOUSE, Kankakee, Ill.; Rush Medical College, Chicago, 1893; aged 72; died, May 12, near Escalon, Calif., of arteriosclerosis and heart disease.

MYRON ELLIS KAHN, Chicago; University of Illinois College of Medicine, Chicago, 1915; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served during the World War; on the staffs of the Michael Reese and Sarah Morris hospitals and the Winfield (Ill.) Sanatorium; aged 47; died, May 25.

GEORGE T. LOVE, Wenona, Ill.; Hospital College of Medicine, Louisville, Ky., 1897; a Fellow, A. M. A.; aged 66; died, May 1, in St. Mary's Hospital, Streator.

JOSEPH F. MILLER, Palmer, Ill.; Missouri Medical College, St. Louis, 1889; a Fellow, A. M. A.; for many years bank president; aged 82; died, May 6, in St. Vincent Hospital, Taylorville, of pneumonia.

LINNAEUS HODGSON PRINCE, Hines, Ill.; Jefferson Medical College of Philadelphia, 1900; member of the American Association of Pathologists and Bacteriologists; served during the World War; served as pathologist on the staff of the Veterans Administration Facility, where he died, July 8, of arteriosclerosis and cerebral hemorrhage.

CARL J. F. ROCHOW, Rock Island, Ill.; Rush Medical College, Chicago, 1903; a Fellow, A. M. A.; aged 61; on the staff of St. Anthony's Hospital, where he died, May 11, of heart disease.

ALBERT RUBLE TRAPP, Lincoln, Ill.; Rush Medical College, Chicago, 1901; a Fellow, A. M. A., served during the World War; aged 62; died, May 8, in St. John's Hospital, Springfield, of infection of the prostate and bladder.

ARTHUR EDWARD WILLIAMS, Rock Island, Ill.; Northwestern University Medical School, Chicago, 1902; member of the Illinois State Medical Society; past president of the Rock Island County Medical Society; aged 63; on the staff of St. Anthony's Hospital, where he died, May 25, of heart disease.

GIFFORD DEAN WRAY JR., Chicago; School of Medicine of the Division of Biological Sciences of the University of Chicago, 1939; aged 24; was found dead, May 2, of poison, self administered.

*Pablum is thoroughly cooked
by a patented process*

and is palatable

*Pablum is thoroughly cooked
by a patented process*

and is low in fiber

*Pablum is thoroughly cooked
by a patented process*

and needs no further cooking

*Pablum is thoroughly cooked
by a patented process*

is rich in iron, rich in calcium,
and rich in vitamins B₁ and G

PABLUM is a palatable mixed cereal food, vitamin and mineral enriched, composed of wheat-meal (farina), oatmeal, cornmeal, wheat embryo, beef bone, brewers' yeast, alfalfa leaf, sodium chloride, and reduced iron. Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons. Mead Johnson & Company, Evansville, Ind., U.S.A.



Announcing KOLPON INSERTS

Newest estrogenic preparation for the modern and really effective treatment of *gonorrheal vulvovaginitis; leucorrhea; non-specific, Trichomonas, or senile vaginitis; pruritus and kraurosis vulvae; leucoplacic vulvitis.*

IMPORTANT FEATURES

Kolpon Inserts combat vulval and vaginal disorders by combined chemical and physiological (estrogenic) effects

SMALL DOSES. Interaction of components obviates large doses. Glucose for immediate production of lactic acid, estrogen for restoration of healthy, mature-type, vaginal mucosa, and a specially selected buffer salt for maintaining optimum acidity in the vagina.

MARKED EFFECTIVENESS. Stimulates healing—increases resistance to invasion—inhibits pathogenic bacterial growth—favors growth of normal vaginal flora—promotes a normal vaginal mucosa.

ECONOMICAL. Decidedly lower in cost than oral or parenteral estrogenic treatment.

PACKAGES: Boxes of 12's; children's and infants' size, 500 I.U.; adults' size, 1000 I.U.

Descriptive literature and complimentary supplies upon request. Please indicate strength desired.

ROCHE - ORGANON, INC., ROCHE PARK, NUTLEY, NEW JERSEY

In Canada: Roche-Organon (Canada) Ltd., 286 St. Paul Street, Montreal, P. Q.

Cut Out This Page and Post Conspicuously

BUYERS INDEX

ABDOMINAL SUPPORTERS

S. H. Camp & Co., Jackson, Mich..... 2

FOODS

Borden Company, 350 Madison Ave., New York..... 12
Coca-Cola Co., Atlanta, Ga..... 2
Corn Products Refining Co., New York City..... 2
R. B. Davis Co., Hoboken, N. J..... 2
Knox Gelatine Laboratories, Johnstown, N. Y..... 8
Mead, Johnson & Co., Evansville, Ind..... 15
S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Medical Protective Co., Fort Wayne, Ind..... 22
Physicians Casualty Co., Omaha, Neb..... 19

HOSPITALS

Stokes Hospital, Louisville, Ky..... 19
Summit Hospital, Oconomowoc, Wis..... 20

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 19

PHARMACEUTICALS

American Can Co., 230 Park Ave., New York City..... 3
Armour & Co., Chicago..... 2
Ernst Bischoff, Ivoryton, Conn..... 2
Bovine Company, Chicago..... 2
Bristol-Myers Co., New York..... 23
Carnrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J... 20
Ciba Company, Cedar and Washington St., New York City. 24
Denver Chemical Co..... 25
E. Fougera & Co..... 2
Gold Pharmacal Co., New York City..... 20
Harrower Laboratory 21
Hoffman-LaRoche, Inc., Nutley, N. J..... 2
Hynson, Westcott & Dunning, Charles and Chase Sts.,
Baltimore 22

Lederle Laboratories, 30 Rockefeller Plaza, New York..... 27
Lilly, Eli, & Co., Indianapolis, Ind..... 14
Maggot Products Co., 222 No. Bank Drive, Chicago..... 2
Morris, Philip, & Co., 19 Fifth Ave., New York..... 13
Nutrition Research Laboratories, 332 S. Michigan Ave.,
Chicago 11
Parke, Davis & Co., Detroit, Mich..... 5
Petrolagar Laboratories, 8134 McCormick Blvd., Chicago... 4
Reed & Carnrick, Jersey City, N. J..... 2
Roche Organon, Inc., Nutley, N. J. 16
Schering & Glatz, Inc., New York City..... 10
G. D. Searle & Co., 4737 Ravenswood Ave., Chicago..... 6
Sharp & Dohme, 111 N. Canal St., Chicago 2
E. R. Squibb & Sons, New York..... 9
Frederick Stearns & Sons, New York..... 2
Wm. R. Warner & Co., 113 W. 118th St., New York City... 2
Winthrop Chemical Co., 170 Varick St., New York City... 2
Zemmer Co., Pittsburgh, Pa..... 18

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville, Ill..... 21
Kenilworth Sanitarium, Kenilworth, Ill..... 18
Michell Farm Sanatorium, Peoria, Ill..... 28
Milwaukee Sanitarium, Wauwatosa, Wis..... Front Cover
Norbury Sanitarium, Jacksonville, Ill..... 18
North Shore Health Resort, Winnetka..... 21
Rogers Memorial Sanitarium, Oconomowoc, Wis..... 28
Waukesha Springs Sanitarium, Waukesha, Wis..... 18
Weirick's Sanitarium, Elgin, Ill..... 19

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago.. 19

SURGICAL SUPPLIES

Baum Co., New York..... 2
General Electric X-Ray Corp., 2012 W. Jackson Blvd.,
Chicago 2

The NORBURY SANATORIUM

JACKSONVILLE, ILLINOIS

INCORPORATED and LICENSED

For the Treatment of Nervous and Mental Disorders

DR. ALBERT H. DOLLEA, Superintendent

DR. FRANK GARM NORBURY

DR. SAMUEL N. CLARK

Associate Physicians

Address
Communications

THE NORBURY SANATORIUM, Jacksonville, Illinois



BUILDING ABSOLUTELY FIRE-PROOF

Waukesha Springs Sanitarium

FOR THE CARE AND TREATMENT OF
NERVOUS DISEASES

BYRON M. CAPLES, M. D., Medical Director

FLOYD W. APLIN, M. D.

Waukesha, Wisconsin

E. J. Kelleher, M. D.
Medical Director

Kenilworth Sanitarium

Est. in 1905 by Sanger Brown, M. D.

Built and Equipped for the Treatment of
Nervous and Mental Diseases

F. G. Shufflebarger, M. D.
Junior Physician

Write for Booklet
on
Insulin and Metrazol Therapy

Christy Brown
Business Manager

Address:
Box 600
Kenilworth, Ill.

ZEMMER

products are dependable

PRESCRIBE OR DISPENSE ZEMMER

Pharmaceuticals . . . Tablets, Lozenges, Ampoules, Capsules, Ointments, etc. Guaranteed reliable potency. Our products are laboratory controlled. Write for catalog.

Chemists to the Medical Profession

THE ZEMMER CO., Oakland Sta., Pittsburgh, Pa.

IL 9-39

Chicago Tumor Institute

21 WEST ELM STREET

Phone: Delaware 5600

Scientific Committee

Max Cutler, M. D., Chairman

Sir G. Lenthal Cheatele, F. R. C. S.

Henri Coutard, M. D.

Arthur H. Compton, Ph. D.

Ludvig Hektoen, M. D.

The Chicago Tumor Institute offers consultation service to physicians and radiation facilities to patients suffering from neoplastic diseases. Graduate instruction in radiotherapy is offered to qualified physicians.

The Radiation Equipment includes:

One 220 k.v. x-ray apparatus

One 400 k.v. x-ray apparatus

One 500 k.v. x-ray apparatus

One 10 gram radium bomb.



PHYSICIANS CASUALTY
ASSOCIATION

PHYSICIANS HEALTH
ASSOCIATION



SINCE 1902

SINCE 1912

Hospital
Accident
Sickness

INSURANCE

FOR ETHICAL PRACTITIONERS EXCLUSIVELY
(50,000 policies in force)

LIBERAL HOSPITAL EXPENSE COVERAGE FOR
\$10.00 PER YEAR

\$5,000.00 accidental death	For
\$25.00 weekly indemnity, accident and sickness	\$33.00
	per year
\$10,000.00 accidental death	For
\$50.00 weekly indemnity, accident and sickness	\$66.00
	per year
\$15,000.00 accidental death	For
\$75.00 weekly indemnity, accident and sickness	\$99.00
	per year

37 years under the same management
\$1,700,000. INVESTED ASSETS
\$9,000,000. PAID FOR CLAIMS
\$200,000. deposited with State of Nebraska for protection of our members.

Disability need not be incurred in line of duty—benefits from the beginning day of disability.

SEND FOR APPLICATIONS, DOCTOR, TO
400 FIRST NATIONAL BANK BLDG.
OMAHA, NEBRASKA

MORPHINE AND OTHER DRUG ADDICTIONS

Selected patients who wish to make good and learn how to keep well; methods easy, regular, humane.
Dr. Weirick's Sanitarium, Elgin, Ill.

Beautiful assorted Christmas Greeting Cards with Envelopes, fifty for \$2. Scripture Text assortment, \$3. We will print a small Scripture Verse, your selection on each. Your name also printed on each or omitted. Order early for Printing.

NICHOLS & COMPANY,
ROCKMART, GEORGIA

THE STOKES HOSPITAL 923 Cherokee Road, Louisville, Kentucky

Our ALCOHOLIC treatment destroys the craving, restores the appetite and sleep, and rebuilds the physical and nervous condition of the patient. Liquors withdrawn gradually; no limit on the amount necessary to prevent or relieve delirium.

MENTAL patients have every comfort that their home affords. The DRUG treatment is one of gradual Reduction. It relieves the constipation, restores the appetite and sleep; withdrawal pains are absent. No Hyoscine or rapid withdrawal methods used unless patient desires same.

NERVOUS patients are accepted by us for observation and diagnosis as well as treatment.

E. W. STOKES, Medical Director. Phones High. 2101-2102

Radium Rental Service

By

THE PHYSICIANS RADIUM ASSOCIATION

Organized for the purpose of making radium available to physicians to be used in the treatment of their patients. Radium loaned to physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

The Physicians Radium Association

Room 1307—55 East Washington St.,
Pittsfield Bldg., CHICAGO, ILL.

Telephones: Central 2268-2269
Wm. L. Brown, M.D., Director



Hospital Facilities
& Personnel for

**NERVOUS & MENTAL
DISORDERS**

G. R. LOVE, M. D.
Physician in Charge

HORMOTONE "T"

direct therapy in

**AMENORRHEA
IRREGULAR MENSTRUATION
MENOPAUSE**

Bottles of 40 tablets

Each tablet contains approximately 200 international units of biologically standardized ovarian follicular hormones.



G. W. CARNRICK CO.

20 Mt. Pleasant Ave., Newark, N. J.



IN WHOOPING COUGH



ELIXIR BROMAURATE

**IS GIVING EXCELLENT
THERAPEUTIC RESULTS**

Cuts short the period of the illness and relieves the distressing, spasmodic cough. Equally valuable in other Persistent Coughs and in Bronchitis and Bronchial Asthma. In four-ounce original bottles. A teaspoonful every 3 to 4 hours.

THIRD EDITION: A new, interesting booklet (3rd edition) on "Whooping Cough and Its Treatment" is just off the press. Drop us a card for a copy. Sent with our compliments. Gold Pharmacal Co., New York

NORTH SHORE HEALTH RESORT

Winnetka, Illinois

A general medical sanitarium equipped for treatment of

Cardiovascular, Renal, Gastro-intestinal and Pulmonary Diseases—Diabetes Mellitus and other Disorders of Metabolism—Anemias—Allergic Conditions—Arthritis—Disabilities Secondary to Old Age—Mild Nervous and Mental Disorders.

Special attention to convalescent care.

Individualized Treatment

Moderate Rates

H. E. Hickman, M. D., *Medical Director*

THE EDWARD SANATORIUM

ESTABLISHED IN 1907 BY DR. THEODORE B. SACHS

Jerome R. Head, M. D., Medical Director

Alberto L. de Guevara, M. D., Associate Medical Director

NAPERVILLE, ILLINOIS

An institution affiliated with the Chicago Tuberculosis Institute for the treatment, by modern methods, of selected cases of Pulmonary Tuberculosis.

Attractive location and surroundings.

Buildings and equipment modern and adequate for all emergencies.

Well trained staff of physicians and nurses.

Physicians are invited to visit the Sanatorium at any time. They are assured of every professional courtesy and consideration.

For detailed information, rates and rules for admission apply to—

THE CHICAGO TUBERCULOSIS INSTITUTE

Phone Central 8316

Rooms 504

360 North Michigan Ave.

Chicago

Pioneer work . . .

is always hard—many times misunderstood—but it has its rewards. There is a great satisfaction in having accomplished something in our efforts to make it easier for the profession to alleviate some of the ills that beset mankind.

The HARROWER LABORATORY, Inc.

Glendale, California

*Ending a quarter of a century
of pioneer work in the field of*

Endocrinology

ADREMIN

ANABOLIN

MENOCRIN

ENDOTHYRIN

ADRENO-CORTIN

PLESTRIN IN OIL

PROFESSIONAL PROTECTION



A DOCTOR SAYS:

"As you know, the judge and jury found in our favor. I have appreciated the booklets and advice that your company has sent me from time to time. This case, also, has been a lesson to me in many ways. Many thanks for the protective insurance you have so ably given me."

THE

MEDICAL PROTECTIVE COMPANY

OF FORT WAYNE, INDIANA

WHEATON, ILLINOIS

CONTENTS—Continued

Carcinoma of Rectosigmoid. Guy V. Pontius, M. D., and E. Lee Strohl, M. D., Chicago.....	281
Effects of Smoking. Jerome R. Head, M. D., Chicago...	283
Pitressin in Dementia Praecox. Isadore Finkelman, M. D., Chicago, and Abraham Simon, M. D., Elgin.....	287
Endemic Typhus Fever. Samuel J. Lang, M. D., and Paul K. Boyer, M. D., Evanston.....	288
Rectal Bleeding. Mortimer Diamond, M. D., Chicago.....	290

EDITORIALS

State Medicine a Political Issue.....	201
Cancer Is Curable.....	201
Urgent Need for a United Profession.....	202
Medical Writing: Technique and Art.....	203
Illinois Physicians on A. M. A. Program.....	203
Medical Economics. E. S. Hamilton, M. D.....	206
North Dakota Doctor. R. G. Nierling, M. D.....	207

CORRESPONDENCE

Comment on Arnold.....	207
Approved Laboratories. A. C. Baxter, M. D.....	209
Criticism of Wagner Bill.....	211
Socialized Medicine from Layman's Viewpoint. A. F. Durand.....	212
Now Seek to Socialize Law.....	212
Scientific Service Committee.....	213
Power Given to Man Not Elected.....	213
Mortality Up Births Down in Illinois.....	214
International Medical Assembly.....	215
American Board of Obstetrics.....	218
Industrial Medicine Northwestern University.....	218
Marriages.....	197
Personals.....	198
News Items.....	198
Deaths.....	130

Behind MERCUROCHROME

(dibrom-oxymercuri-fluorescein-sodium)



is a background of

Precise manufacturing methods insuring uniformity

Controlled laboratory investigation

Chemical and biological control of each lot produced

Extensive clinical application

Thirteen years' acceptance by the Council of Pharmacy and Chemistry of the American Medical Association



A booklet summarizing the important reports on Mercurochrome and describing its various uses will be sent to physicians on request.

Hynson, Westcott & Dunning, Inc.
BALTIMORE, MARYLAND

THE CHEMISTRY OF VITAMIN A AND SUBSTANCES HAVING VITAMIN A EFFECT

L. S. Palmer, St. Paul (*Journal A. M. A.*, May 21, 1938), gives a brief discussion of the chemistry of vitamin A and the substances having similar effects. In a previous vitamin symposium in *The Journal*, the perplexing question as to why the yellow-red plant pigment carotene exhibits vitamin A activity although the familiar vitamin A of liver oils is essentially a colorless substance had been answered by the discovery that carotene is convertible in the body to vitamin A. The chemical basis for such a relationship had been established by Karrer and his associates, who had determined the chemical constitution both of plant carotene and also of vitamin A from fish liver oil. The first complete structural formula for carotene has since turned out to be that of β -carotene, which is by far the most important and widely distributed of the known coloring matters which have vitamin A activity. The final step in this chemical story is the synthesis of the pure vitamin in vitro. Recent reports indicate that this has been accomplished. The isolation of the crystalline natural vitamin has also been reported.

An eminent physician says 50 per cent. of the doctors would starve if people would learn to control their emotions. Yes, and 90 per cent. of the politicians wouldn't be any too fat.—*St. Louis Star-Times*.

A Colonic "STAFF" for the Aged



For the aged, a gentle eliminant is often useful to stimulate peristaltic function in sometimes lethargic intestinal muscles. Entirely suitable for this task are the salines.

Sal Hepatica

Constipation therapy at its finest is available in Sal Hepatica. Synergistically blended mineral salts exert osmotic influence to provide *liquid bulk* which effectively stimulates lethargic colon muscles. Waste is gently eliminated. Sal Hepatica also helps to combat excessive gastric acidity and promotes increased flow of bile.



Sal Hepatica resembles the action of famous natural aperient waters. Its bubbling effervescence yields a pleasing drink... A note on your letterhead will bring you samples and literature.

Sal Hepatica Flushes the Intestinal Tract and Aids Nature Toward Re-establishing a Normal Alkaline Reserve.

BRISTOL-MYERS CO.

19 RR WEST 50th STREET

NEW YORK, N. Y.



LEAPING INTO PROMINENCE AS AN ANTISPASMODIC... TRASENTIN*

Growing rapidly is the reputation of Trasentin "Ciba" as a prompt, effective spasm stopper. Trasentin (hydrochloride of diphenylacetyldiethylaminoethanol) possesses the advantages of papaverine (on involuntary muscle) and atropine (on parasympathetic endings.) It does *not* cause atropine's undesirable side-effects such as mydriasis, dryness of mouth, irregular pulse, dysuria, etc.

You will want to try Trasentin (non-narcotic) in myogenic and neurogenic spasms of the gastro-intestinal, biliary, and genito-urinary tracts, dysmenorrhea (due to hyperirritability and spasticity of myometrium).

TABLETS • LITERATURE UPON REQUEST

*Trade Mark Reg. U. S. Pat. Off.

Word "Trasentin" identifies the product as hydrochloride of diphenylacetyldiethylaminoethanol of Ciba's manufacture.



**CIBA PHARMACEUTICAL
PRODUCTS, INC.**
SUMMIT, NEW JERSEY

Book Reviews

A TEXTBOOK OF SURGERY. By American Authors. Edited by Frederick Christopher, B. S., M. D., F. A. C. S., Associate Professor of Surgery at Northwestern University Medical School; Chief Surgeon, Evanston (Illinois) Hospital. Second edition, revised. 1695 pages with 1381 illustrations on 752 figures. Philadelphia and London. W. B. Saunders Company, 1939. Cloth, \$10.00 net.

This is a voluminous work and is all that the terms of text-book of surgery implies. In nearly every section important additions and deletions have been made. The various uses of sulfanilamide have been discussed by twelve authors. New observations have been included on the surgical treatment of actinomycosis, the transportation of the patient with a spinal injury, the surgical treatment of ulcerative colitis, the origin of hygroma, the value sterols (vitamin K) to the jaundice patient, the use of mandelic acid and of sulfanilamide as urinary antiseptics and the significance of urinary prolan in cases of testicular tumor.

A TEXTBOOK OF CLINICAL NEUROLOGY. By Israel S. Wechsler, M. D., Professor of Clinical Neurology, Columbia University, New York; Neurologist, The Mount Sinai Hospital; Attending Neurologist, Neurological Institute; formerly Attending Neurologist, The Montefiore Hospital, New York. Fourth Edition, Revised. 844 pages with 162 illustrations. Philadelphia and London. W. B. Saunders Company, 1939. Cloth, \$7.00 net.

Since the publication of the Third Edition a number of advances have occurred in Neurology, these changes prompted the author to revise the text book in order to keep abreast of the times. In this edition the author has added the result of recent studies in neurology and incorporated important observation. The author has made innumerable small but important changes, addition, and deletions, which have brought the book completely up-to-date.

MENSTRUAL DISORDERS. By C. Frederic Fluhmann, B. A., M. D., C. M., Associate Professor of Obstetrics and Gynecology, Stanford University School of Medicine, San Francisco, California; Assistant Visiting Obstetrician and Gynecologist to Lane and Stanford University Hospitals; Fellow of the American Gynecological Society. 329 pages with 119 illustrations. Philadelphia and London. W. B. Saunders Company, 1939. Cloth, \$5.00 net.

In this work the author sets forth our present concepts of the physiology of the menstrual cycle in women, and the various disorders which may occur under the influence of local or systemic disease. In this work every attempt is made to guide the physician in determining possible causative factors and in removing them through the institution of sound therapeutic measures and agents. The author has detailed treatments directed not solely to basic causes, but also to the relief of symptoms.



In Boils and Furuncles

two of the main principles of treatment are:

1. To keep the surrounding area strictly aseptic;
2. To allow the boil to run its course with the aid of appropriate medication.

The use of Antiphlogistine suits the purpose of *both* requirements — admirably.

It is an antiseptic, surgical dressing, possessing heat-retaining, osmotic and decongestive qualities. It is a most desirable supplement to injection, or other therapy.

Sample on request

The Denver Chemical Mfg. Co.
163 Varick Street • • New York



Antiphlogistine

Book Reviews

MANUAL OF UROLOGY. By R. M. LeComte, *M. D. Second Edition. Baltimore. The Williams & Wilkins Co. 1939. Price \$4.00.

Progress in Urology has prompted the author to rewrite practically every subject presented.

Sections on the neuromuscular physiology and pathology of the bladder and a chapter on impotence and sterility have been added.

A short bibliography have been added for the convenience of those who may wish to follow various subject through their source or to elaborate on the material given in the text.

ESSENTIALS OF FEVERS. By Gerald E. Breen, M. D. Baltimore. The Williams & Wilkins Company. 1939. Price \$3.00.

In this work the author has compressed the essentials of those acute infectious diseases, commonly known as "fevers" into a volume of pocket size.

Sections on preventive nursing and isolation, elementary epidemiology, and the law of infectious disease, have been included and wherever practicable, a note on preventive inoculation and the control of outbreaks have been appended to the description of each condition.

SCLEROSING THERAPY. Edited by Frank C. Yeomans, M. D., with 185 illustrations on 117 figures. Baltimore. The Williams & Wilkins Company. 1939. Price \$6.00.

Conditions amenable to Sclerosing Therapy are systematically covered in this book. The extensive experience of each contributor to this volume in his assigned subject enables him to evaluate the merits, indications and limitations of treatment by injection, to present clearly, definite and exacting technique of today together with the promising results obtainable in practice. The correct procedures are clearly and freely shown in excellent original illustrations

INFANT AND CHILD IN HEALTH AND DISEASE. With special reference to nursing care. By John Zahorsky, M. D., and Elizabeth Noyes, R. N. Second edition. St. Louis. The C. V. Mosby Company. 1939. Price \$3.00.

This edition has been radically revised. The format now contains three parts, all complete, in sequence and easily "teachable." The material has been brought up-to-date. Many new illustrations have been added. The completed improvement in all phases of the book make it most desirable for schools and nursing.

CARDIOVASCULAR. DISEASES, THEIR. DIAGNOSIS. AND TREATMENT. By David Scherf, M. D., and Linn J. Boyd, M. D. St. Louis. C. V. Mosby Company. 1939. Price \$6.25.

This book is not intended to be a text book and does

not make any claim to completeness. Rather, it is intended to supply considerable practical information by brief discussions for direct application to diagnosis and treatment without recourse to complicated methods and apparatus.

OPERATIVE ORTHOPEDICS. By Willis C. Campbell, M. D., with 825 illustrations including four color plates. St. Louis. C. V. Mosby Company. 1939. Price \$12.50.

This volume is intended to meet the current needs for a comprehensive work on operative orthopedics, not only for the specialist, but also for many industrial and general surgeons, who are doing excellent work in some branches in orthopedic surgery.

It is not the intention of the author to convey the impression that the chief or most important method of treatment of orthopedic affections is open surgery. After treatment is given in detail for practically all operative technics. This is a most essential, yet too often neglected, factor in the success of any surgical treatment.

FUNCTIONAL DISORDERS OF THE FOOT THEIR DIAGNOSIS AND TREATMENT. By Frank D. Dickson, M. D., and Rex L. Diveley, M. D. 202 illustrations. Philadelphia, Montreal, London. J. B. Lippincott Company. 1939. Price \$5.00.

Functional Disorders of the Foot is a complete book --it covers every phase of the subject, thoroughly and conclusively. The discussion of any disorder plainly points the way to diagnosis and treatment. While much of the book is elementary, it is of an intensely practical nature and should be in every library as a ready reference.

OTOLARYNGOLOGY IN GENERAL PRACTICE. By Lyman G. Richards, M. D. Illustrated. New York. The MacMillan Company. 1939. Price \$6.00.

This work is intended to serve the general practitioner as a guide in distinguishing between those cases which he is qualified to treat and those which undeniably belong in the specialized field.

The illustrations are designed particularly to illustrate procedures and clinical entities which concern almost every general practitioner. They are exceptionally clear and accurate.

MODERN CLINICAL PSYCHIATRY. By Arthur P. Noyes, M. D., Superintendent, Norristown State Hospital, Norristown, Pa. Second edition, rewritten and enlarged. 570 pages. Philadelphia and London. W. B. Saunders Company, 1939. Cloth, \$5.00. net.

In this work the author has made an effort to deal merely with the obvious manifestations of major neuroses and psychoses. He attempts to articulate psychiatry both with personality reaction observed in the every day social contacts in life and with reaction of the organism which, although appearing on the surface to be purely somatic nevertheless contain significant mental factors or aspects.

Advances in the therapy of pneumonia —

SULFAPYRIDINE

SULFAPYRIDINE has been rightfully given a place comparable to type-specific serum in the treatment of pneumococcal pneumonias.

The ease with which "Sulfapyridine Therapy" can be universally applied makes it readily adaptable to public health use. It is useful in cases in which it is difficult to make a type diagnosis, also in the treatment of multiple pneumococcus infections. In some late cases the drug has appeared to enhance the effectiveness of the serum.

Whether it is equally effective in all types or whether certain strains are drug-resistant has yet to be determined.

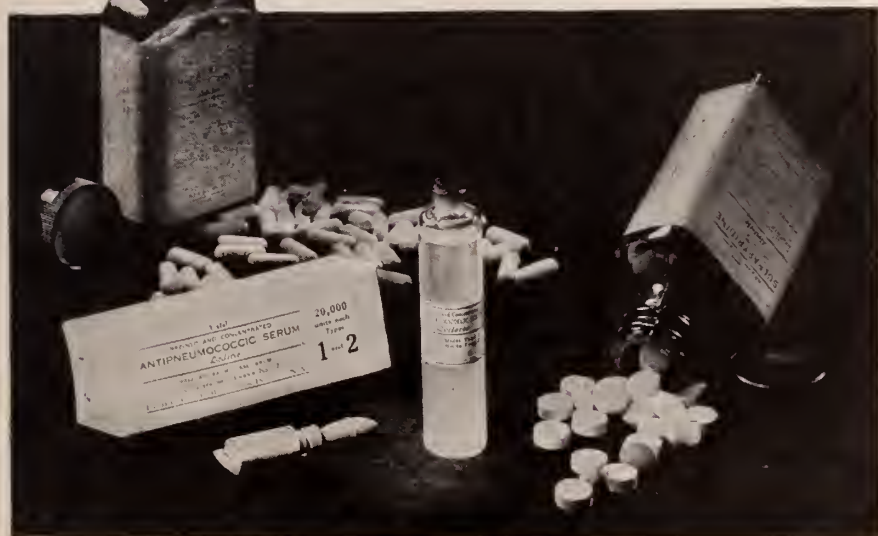
The common toxic effects of this drug are now well recognized. Disturbance of renal function is one of the most important complications, hematuria having been noted with considerable frequency. Hemolytic anemias similar to those seen in patients treated with Sulfanilamide also occur.

These more serious toxic reactions may be lessened by the combined use of drug and specific serum therapy, mainly, because less drug is required and the period of treatment is greatly shortened. If serum is administered after the establishment of an effective drug level, a crisis may be expected in some cases within 6-12 hours, and usually smaller quantities of serum are needed.

In some cases a higher degree of effectiveness has been obtained by the use of both drug and serum therapy. Experimentally and clinically it has been indicated that the action of each may complement the other.

Literature on Request

LEDERLE LABORATORIES, INC.
30 ROCKEFELLER PLAZA NEW YORK, N. Y.



Lederle Laboratories are sponsors
of large scientific exhibits
on Allergy and Pneumonia
in the
Medicine & Public Health Building
at the New York World's Fair

Rogers Memorial Sanitarium

Oconomowoc, Wisconsin

Phone 448

RESIDENT PHYSICIANS

James C. Hassall, M. D.

Medical Director

Donald A. R. Morrison, M. D.

Owen C. Clark, M. D.



For the treatment of NERVOUS and MENTAL DISEASES

Fireproof building; modern, home-like accommodations; beautiful views over lakes. Sixty acres of park. Every essential for treatment provided, including hydro-, physio-, and occupational therapy under supervision of trained personnel. Number of patients limited, assuring personal attention from the resident staff.

BOARD OF TRUSTEES

JAMES C. HASSALL, M. D.

FREDERICK PABST

Oconomowoc, Wis.

T. H. SPENCE

MITCHELL MACKIE

MACKEY WELLS

Milwaukee, Wisconsin

PETER BASSOE, M. D.

Chicago, Illinois

W. S. MIDDLETON, M. D.

Madison, Wisconsin

MICHELL FARM



MICHELL FARM

Mild Nervous and Mental
Diseases

MICHELL SANITARIUM

Severe Nervous and Mental
Drug and Alcoholic Cases

Licensed by the State of Illinois

George W. Michell, M.D., Medical Director; Helen C. Coyle, M.D., Psychiatrist

Wm. H. Holmes, M.D., Chicago, Med. Con.

Selected Cases of Schizophrenia (Dementia Praecox) received for Insulin Shock Therapy

Literature on Request • 106 N. Glen Oak Ave., Peoria, Illinois

Illinois Medical Journal

OWNED AND PUBLISHED BY THE MEDICAL PROFESSION OF ILLINOIS
Office of Publication 715 Lake Street, Oak Park, Illinois; Editorial and Executive Office 6221 Kenmore Ave., Chicago

Vol. 76, No. 4

OCTOBER, 1939

\$3.00 a Year

CONTENTS:

Editorials (For Titles See Extended Table of Contents) 300

ORIGINAL ARTICLES

Carcinoma of the Larynx. *L. Benno Bernheimer, M. D., Chicago*..... 319
Treatment of Corneal Ulcer. *Watson W. Gailey, M. D., Bloomington, Ill.*..... 322
Respiratory Infections in Children. *John F. Carey, M. D., Joliet, Ill.*..... 325
County Secretaries Cooperation. *Robert S. Berg-hoff, M. D., Chicago*..... 329
Cataract vs. Glaucoma. *Louis Bothman, M. D., Chicago* 337

Rabies Control in Illinois. *Cecil A. Z. Sharp, M. D., Springfield* 335
Excretion Urography. *Alfred E. Jones, M. D., and Robert A. Arens, M. D., Chicago*..... 339
Radium Treatment of Neoplasms of Vagina. *Frank E. Simpson, M. D., J. Ernest Breed, M. D. and James S. Thompson, Ph. D., Chicago*..... 344
Control of Syphilis and Gonorrhea. *Herman M. Solloway, M. D., Springfield, Ill.*..... 346
Plastic Surgery of Face and Neck. *M. Reese Guttman, M. D., Chicago*..... 349
Angina Pectoris and Coronary Disease. *Oscar A. Strauss, M. D., Chicago*..... 351
Half Million Deaths from Appendicitis. *Arnold S. Jackson, M. D., Madison, Wis.*..... 355

(Continued on page 26)

Entered as Second-class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 8, 1879. Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 8, 1917, authorized July 15, 1918.

MILWAUKEE SANITARIUM, Wauwatosa, Wis. For NERVOUS DISORDERS

(Chicago Office—1823 Marshall Field Annex
Wednesdays, 1-3 P. M.) Central 1162.

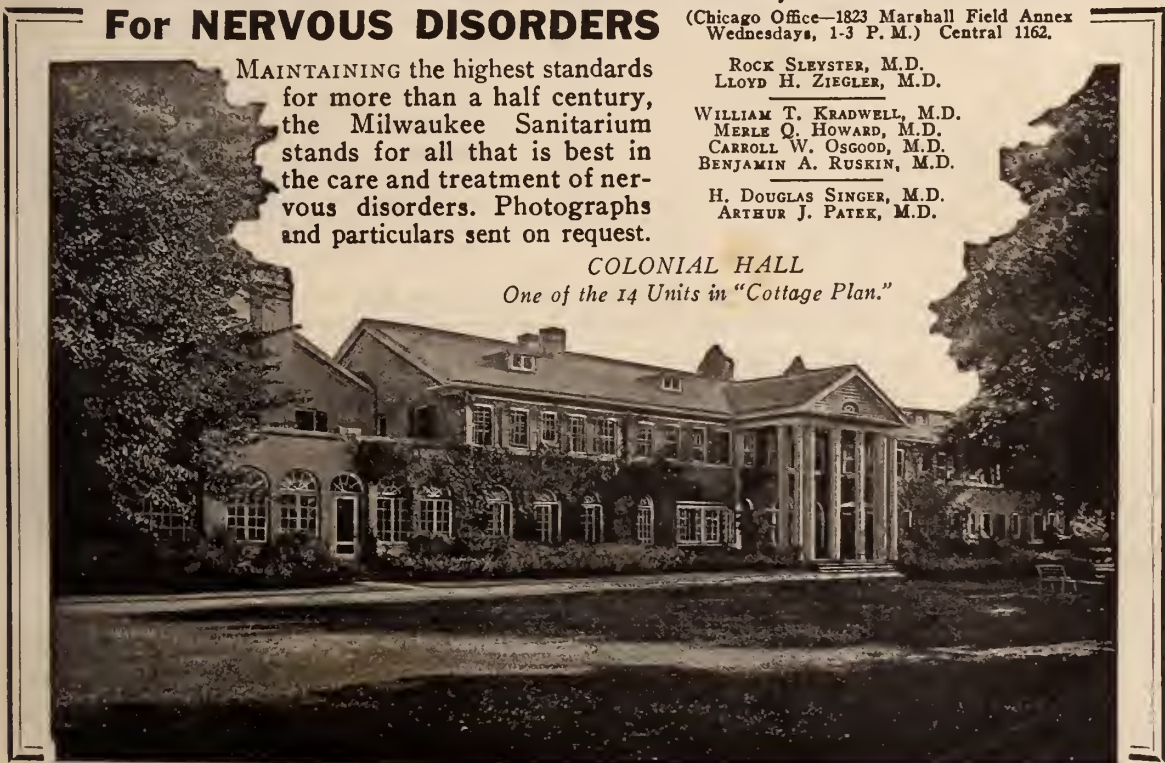
MAINTAINING the highest standards for more than a half century, the Milwaukee Sanitarium stands for all that is best in the care and treatment of nervous disorders. Photographs and particulars sent on request.

ROCK SLEYSER, M.D.
LLOYD H. ZIEGLER, M.D.
WILLIAM T. KRADWELL, M.D.
MERLE Q. HOWARD, M.D.
CARROLL W. OSGOOD, M.D.
BENJAMIN A. RUSKIN, M.D.

H. DOUGLAS SINGER, M.D.
ARTHUR J. PATEK, M.D.

COLONIAL HALL

One of the 14 Units in "Cottage Plan."



DOSULES*

FOR CUTANEOUS APPLICATION

The Male Hormone

NEO-HOMBREOL DOSULES



—Hypogonadism.

—The male climacteric, including such symptoms as nervousness, irritability, hypertension, arthritic pains, and incipient prostatism.

—As maintenance therapy in the intervals between injections in connection with more intensive parenteral therapy. Each Neo-Hombreol Dosule contains 4 mg. of synthetic chemically pure testosterone propionate in 2 Gm. of a highly absorbable ointment base.

** Dosules are sealed soft gelatin capsules which deliver an accurately measured dose of a hormone-containing ointment. This is an exclusive development of Roche-Organon, Inc.*

ROCHE-ORGANON, INC. • ROCHE PARK, NUTLEY, N. J.

In Canada: Roche-Organon (Canada) Ltd., 286 St. Paul St., West, Montreal, P. Q.

*A Forward Step in
Sex Hormone Therapy*

*More effective than
tablets*

Dependable Action

Accurate Dosage

Economical

The Female Hormone

MENFORMON DOSULES

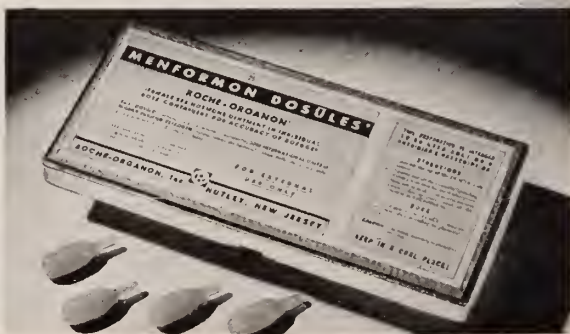
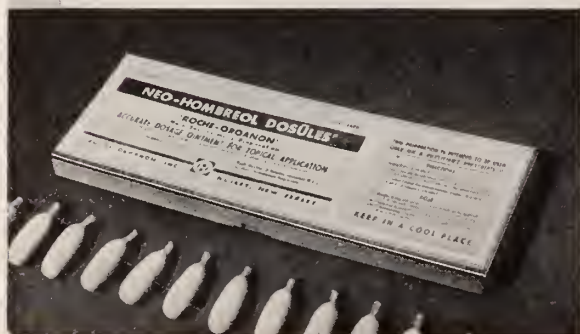


—Hypogonadism.

—Mild cases of hypomenorrhea; menopausal disturbance.

—For direct effect by local application in pruritus vulvae, kraurosis vulvae, and in cases in which stimulation of breast growth is desired.

—As maintenance therapy in the intervals between injections in connection with more intensive parenteral therapy. Each Menformon Dosule contains 2000 I. U. of Menformon (purified estrogen) in 1 Gm. of highly absorbable ointment base.



METHODS FOR QUANTITATIVE ESTIMATION OF THE VITAMINS

1. The Determination of Vitamin D Activity

● About fifteen years ago it was clearly established that there could be present in certain foods or biological materials some substance which possessed antirachitic potency. Subsequently this "antirachitic factor" became known as vitamin D. Today, we know that at least ten sterol derivatives may exert antirachitic effects closely comparable to those of the originally discovered vitamin D (1).

Recognition of the existence of the antirachitic vitamin naturally stimulated investigation of methods whereby this dietary essential could be quantitatively estimated. Steady advances in knowledge of the causes and effects of rickets brought gradual improvements in these methods. Consequently, there are now available several techniques for the quantitative determination of vitamin D in foods or other biological materials.

The first and probably most widely employed method for estimation of vitamin D is by means of the so-called "line test" (2). In this technique as now employed (3), young rats are confined for 18 to 25 days to a diet conducive to development of rickets. These periods of time, with proper handling and confinement of the animals, are sufficient to induce a definitely rachitic condition. The rachitic rats are then properly grouped with respect to negative control groups to receive no supplements to the rachitic ration; positive control or reference groups to receive graded doses of some standard reference material; and "assay groups" to be given graded doses of the material under test. For the next 8 days the animals are fed daily doses of the proper supplement, either assay or reference material. No supplements are fed on the ninth and tenth days.

On the eleventh day the animals are sacrificed and either the proximal end of the tibia or the distal end of the radius or ulna dissected out, sectioned, cleaned and finally

immersed in silver nitrate solution. By double decomposition reaction, silver salts deposit where calcium is present in the metaphysis of the bone. When exposed to light these silver salts are reduced and form a dark line indicating the extent of calcium deposition. The experienced technician can estimate the degree of healing from rickets by the continuity and area of the line. By comparison of the results obtained on the various groups of animals, a quantitative expression of the antirachitic activity of the material under assay may be obtained.

A second method for evaluating vitamin D activity is that involving determination of "bone ash" (4). In this technique, final estimation of the degree of bone calcification—and thus the antirachitic potency of the substance under assay—is made by chemical analysis of specific bones of the experimental animals. A third assay method (5) is that involving roentgenological examination of certain bones. Comparisons of the bone densities of the various experimental animals serve as a basis for estimating the degree of healing from—or prevention of—rickets and hence permit determination of the vitamin D activity of the material under test.

Common foods as they naturally occur can hardly be considered as food sources of vitamin D. However, as exceptions, certain foods of marine origin (6) might be mentioned which consistently contribute small but definite amounts of the antirachitic factor to the diet. In addition, development of various means of fortifying foods with vitamin D—particularly those foods of importance in infant and child feeding—has made available other food sources of the vitamin (7). Among the many varieties of commercially canned foods will be found products of both types, which, when properly used or supplemented, should prove of value in obtaining an adequate intake of vitamin D, particularly by infants and children.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

(1) 1938. J. Am. Med. Assoc. 110, 2150.

(2) 1922. J. Biol. Chem. 51, 41.

(3) 1936. The Pharmacopoeia of the United States of America, Eleventh Decennial Revision, 482.

(4) 1923. J. Biol. Chem. 58, 71.

1924. Ibid. 61, 405.

(5) 1928. Biochem. J. 22, 135.

(6) 1938. J. Am. Med. Assoc. 111, 528.

(7) 1937. J. Am. Med. Assoc. 108, 206.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the fifty-second in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.



12

Reasons why!

...THE EMULSION

Petrolagar

FOR CONSTIPATION!

#

7

Augments intestinal contents by supplying an unabsorbable fluid.

1. Petrolagar is more palatable. Easier to take by patients with aversion to plain oil—may be thinned by dilution.
2. Miscible in aqueous solutions. Mixes with gastro-intestinal contents to form a homogeneous mass.
3. Does not coat intestinal mucosa. Petrolagar is an aqueous suspension of mineral oil — oil in water emulsion.
4. No accumulation of oil in folds of mucosa.
5. Will not coat the feces with oily film.
6. Does not interfere with secretion or absorption.
7. More even distribution and dissemination of oil with gastro-intestinal contents.
8. Assures a more normal fecal consistency.
9. Less likely to leak.
10. Provides comfortable bowel action.
11. Makes possible five types of Petrolagar to select from to meet the special needs of Bowel Management.

Petrolagar — Liquid petrolatum 65 cc. emulsified with 0.4 Gm. agar in a menstruum to make 100 cc.



Petrolagar

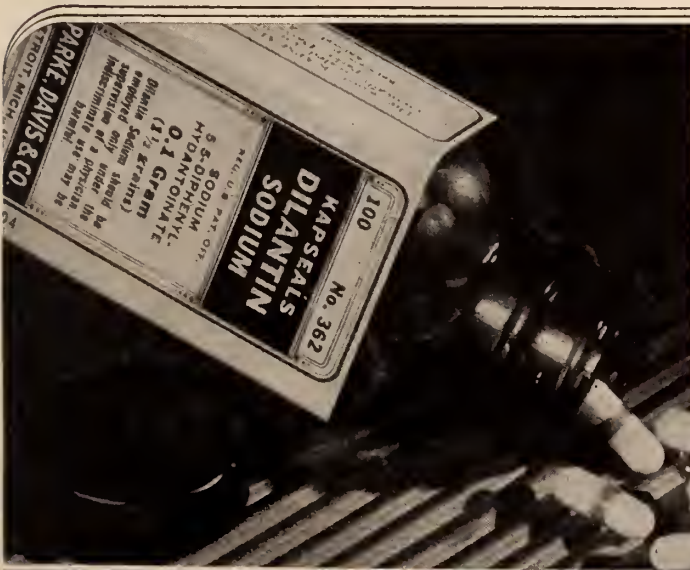
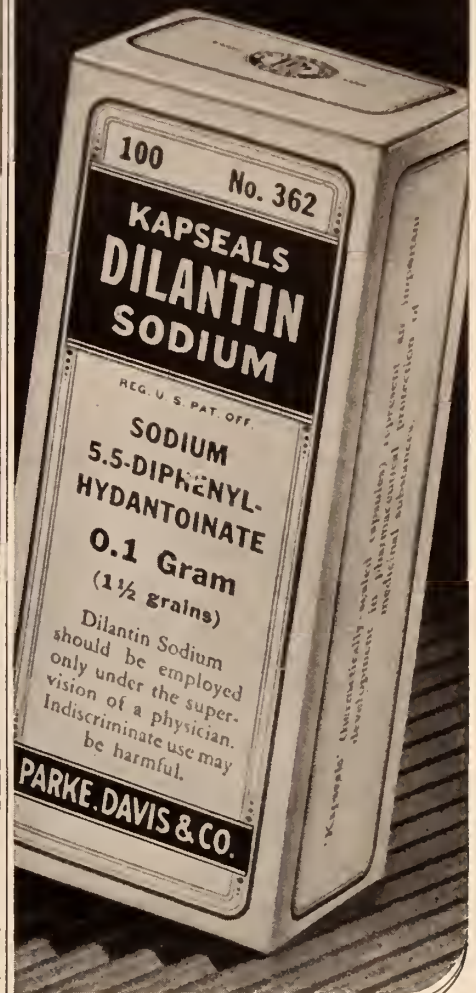
Petrolagar Laboratories, Inc. • 8134 McCormick Boulevard • Chicago, Illinois

AN ANTICONVULSANT FOR THE TREATMENT OF EPILEPSY

KAPSEALS DILANTIN SODIUM^{*}

DILANTIN SODIUM (sodium 5,5-diphenylhydantoinate), an anticonvulsant with little or no hypnotic effect, is supplied for the treatment of epileptics not responsive to other medication. Extensive clinical use indicates that Dilantin Sodium will prevent, or greatly decrease the frequency and severity of, convulsive seizures in a majority of epileptics. However, since the significance of observed reactions to Dilantin Sodium is not fully established, patients receiving the drug should be closely observed.

Dilantin Sodium is accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies.



^{*} The name 'Dilantin' Sodium designates the sodium salt of diphenyl hydantoin. 'Dilantin' Sodium was formerly known as 'Dilantin,' a term now designating the basic substance, diphenyl hydantoin. Dilantin Sodium is available as 0.1 Gram (1½-grains) and 0.03 Gram (½-grain) Kapseals, in bottles of 100, 500 and 1000.

PARKE, DAVIS & COMPANY - Detroit, Michigan
The World's Largest Makers of Pharmaceutical and Biological Products

What type of sugar for Milk

INFANT
FEEDING
PRACTICE
POINTERS

Answers to Physicians' Questions

1. Q. What is the chemical composition of Karo?

A. Karo contains:

Dextrin	50%
Maltose	23.2%
Dextrose	16%
Sucrose	6%
Invert sugar	4%
Minerals	0.8%

on the dry basis.

2. Q. How does Karo Syrup compare with powdered maltose-dextrins in caloric value?

A. Karo Syrup contains twice as many calories as similar sugar modifiers in powdered form (on a volume basis).

3. Q. What are the relative rates of absorption of sugars?

A. Dextrose is absorbed most rapidly, lactose most slowly and Karo at intermediate rates of speed.

Modification?

The choice of a sugar is determined by its properties. They are evaluated by leading pediatricians in terms of the infant's digestion — (1) ease of digestion and absorption; (2) degree of intestinal fermentation; (3) degree of intestinal irritation. Put Karo to this test!

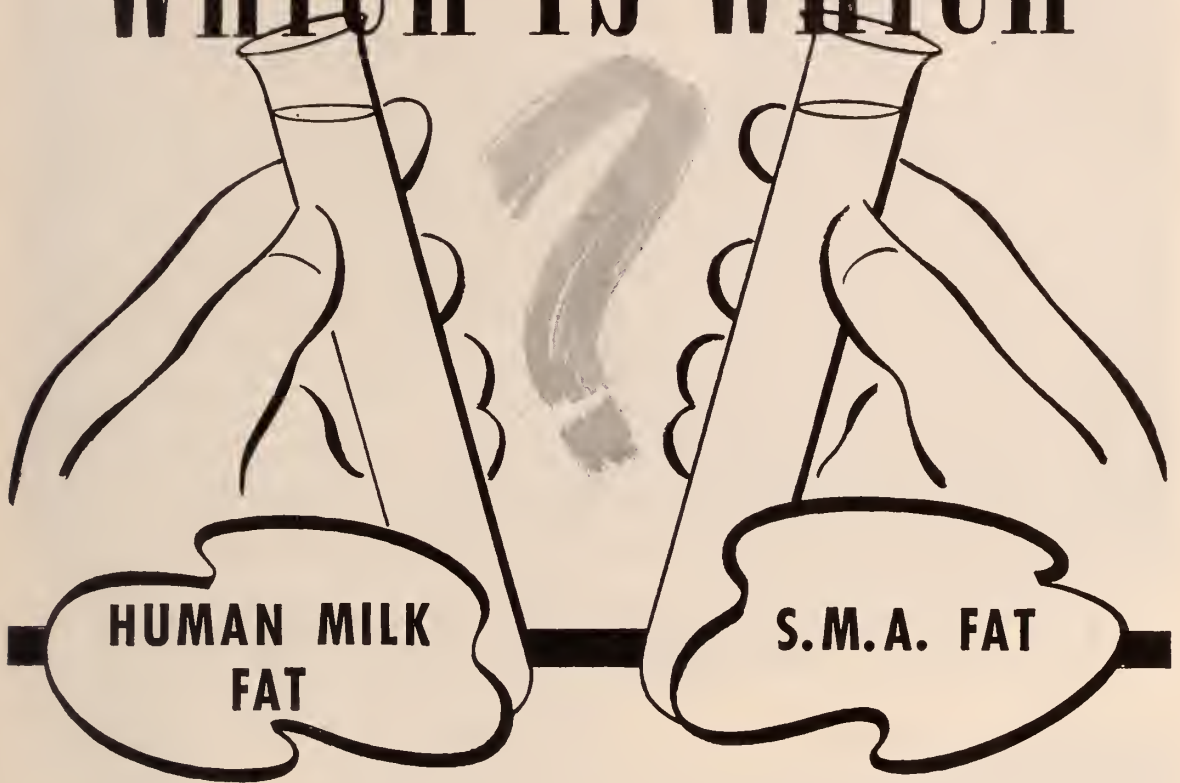
Karo Syrup contains a large proportion of dextrin with relatively small amounts of maltose, dextrose and cane sugar. Dextrin is readily converted into maltose and dextrose; and all are easily absorbed with minimum irritation and fermentation in the intestinal tract.

*"Infants Thrive
ON
Karo Formulas"*



Infant feeding practice is primarily the concern of the physician; therefore, Karo for infant feeding is advertised to the Medical Profession exclusively. For further information, write Corn Products Sales Company, Dept. I-10, 17 Battery Place, New York City, N. Y.

WHICH IS WHICH



S.M.A. Fat is like Human Milk Fat in that it has the same chemical constants and physical properties

Same Saponification Number

Same Iodine Number

Same Reichert-Meissl Number

Same Polenske Number

Same Melting Point

Same Refractive Index

S.M.A. Fat is included with protein, carbohydrate and minerals to provide a mixture rich in vitamins A, B₁ and D that closely resembles human milk, when diluted according to directions. S.M.A. is antirachitic.

INFANTS RELISH S.M.A. — DIGEST IT EASILY — THRIVE ON IT!

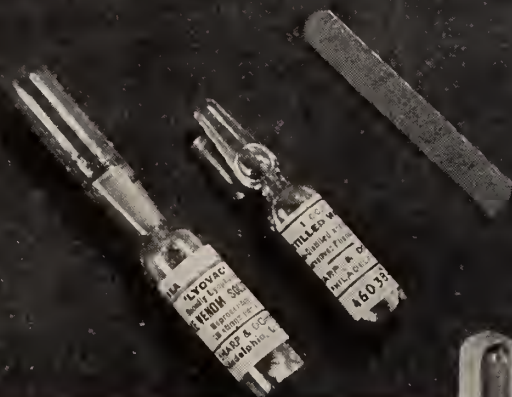
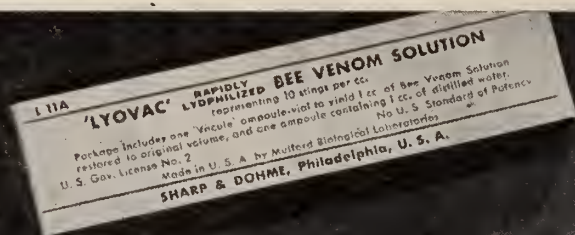
S.M.A. is a food for infants — derived from tuberculin tested cows' milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride;



altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and in physical properties.



A new approach to the treatment of Arthritis and Neuritis



'LYOVAC' BEE VENOM SOLUTION

SINCE the early days of history, bee venom has frequently been referred to in medical literature for its value in the treatment of arthritis and neuritis. The factors which kept it from widespread use have now been overcome in 'Lyovac' Bee Venom Solution, which supplies standardized bee venom in a stable form which retains its potency for many years.

Published reports^{1, 2} of the effectiveness of Mulford 'Lyovac' Bee Venom Solution in reducing swelling, relieving pain and improving joint motility are paralleled by similar reports from physicians in general practice. It is indicated in the treatment of acute and chronic arthritis. It appears to be most effective in extra-articular mani-

Flame-sealed stem

Depression for
breaking off stem

Rubber stopper

10 dehydrated bee
stings under vacuum



Mulford 'Lyovac' Bee Venom Solution is packaged under the new lyophile process by which the original therapeutic value of freshly prepared biological substances at the time of their highest potency is retained for many years.

Specify 'LYOVAC' BIOLOGICALS

festations, such as muscular rheumatism, sciatica, lumbago, neuritis, and iritis.

Mulford 'Lyovac' Bee Venom Solution represents the whole venom of ten bee stings. After candle filtration, for sterility, the solution is rapidly frozen and rapidly dehydrated under high vacuum. It is preserved under vacuum in the specially-designed 'Vacule' flame-sealed ampoule-vial.

Detailed information on the use of this product, the dosage schedule and method of application will be sent on request.



"For the Conservation of Life"

MULFORD BIOLOGICAL LABORATORIES

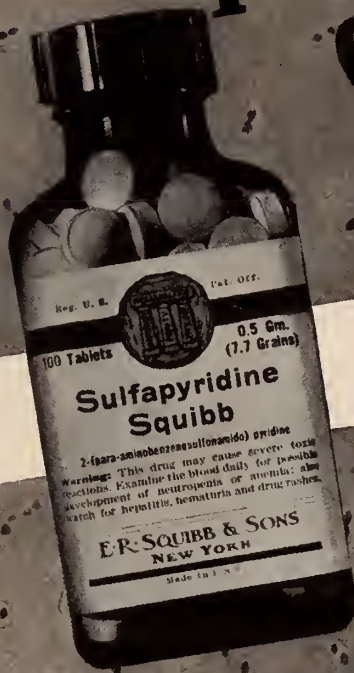
SHARP & DOHME

PHILADELPHIA

1. South. Med. & Surg., 100:555, Nov., '38
2. Nebraska M. J., 24:298, Aug., '39

Now Available

Sulfapyridine Squibb



2-(Para-Aminobenzenesulfonamido) Pyridine

CAPSULES

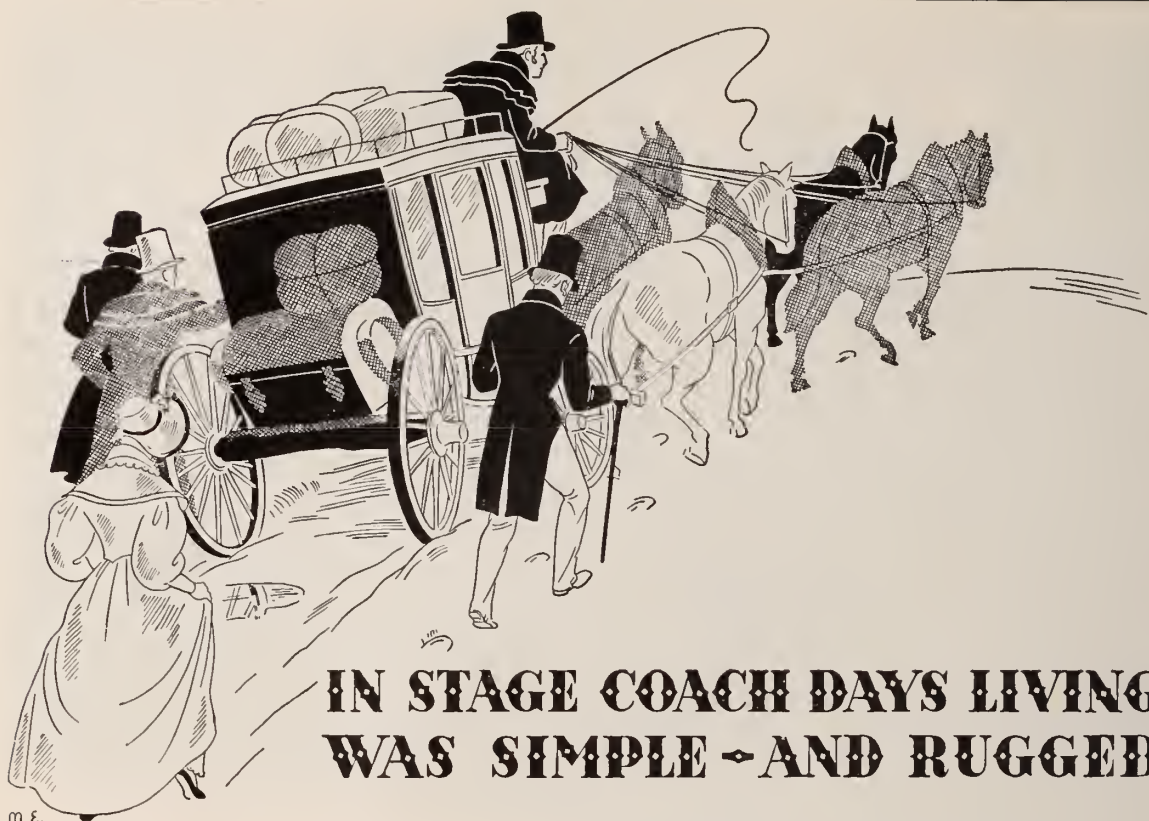
0.25 Gm. (3.85 grains)
Bottles of 50

TABLETS

0.5 Gm. (7.7 grains)
Bottles of 50, 100 and 1000

*For literature address the Professional Service
Department, 745 Fifth Ave., New York, N. Y.*

E·R·SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.



IN STAGE COACH DAYS LIVING WAS SIMPLE - AND RUGGED

But pain meant suffering then even as today. Many a dour disposition found its source in hemorrhoids . . . making a stoic of the sufferer . . . who found little joy in living.

For more than a third of a century, Anusol Suppositories have aided the physician to stay the hand of pain. Without narcotic, local anesthetic or analgesic drugs, Anusol Suppositories have made it possible to treat hemorrhoids and other painful, inflammatory conditions of the proctological area medically and afford relief from pain, tenesmus and "fear constipation."

How well Anusol Suppositories have been performing their mission of relief, you can quickly gather by simply asking for a trial supply on your letterhead to observe results at first hand.

ANUSOL HEMORRHOIDAL SUPPOSITORIES

A SCHERING & GLATZ PRODUCT

SUPPLIED IN BOXES OF 6 AND 12 SUPPOSITORIES

SCHERING & GLATZ, INC., 113 West 18th Street, New York City

PROLARMON

In the Treatment of Infected and Non-Infected Slow-Healing Wounds



Extensive ulcer of leg from
third degree burn.



Chronic metastatic osteomy-
elitis of right tibia.

Prolarmon Liquid

Prolarmon Liquid is a sterile, aqueous solution containing the water-soluble and filtrable substances of comminuted blow-fly maggots (*Lucilia sericata*), 5%; boric acid, 4%; sodium chloride, 0.75%; chlorbutanol, 0.5%; calcium gluconate, 0.5%; oxyquinoline sulfate, 0.4%.

Prolarmon Liquid is available in 4 oz. and 8 oz. bottles; also in hospital sizes, $\frac{1}{2}$ gal. and 1 gal. Prolarmon Jelly may be had in 1 oz. tubes, and in 4 oz. and 8 oz. jars; it is also available in hospital sizes, $4\frac{1}{4}$ and $8\frac{1}{2}$ lb. jars.

Prolarmon Jelly

Prolarmon Jelly, a greaseless, sterile preparation, provides the active ingredients of Prolarmon Liquid, incorporated in an aqueous jelly base composed of vegetable gums, cornstarch, glycerin, sodium chloride, potassium cetyl palmitate, citric acid, and water.

Physicians are invited to send for clinical test samples, literature, and bibliography of published reports.

MAGGOT PRODUCTS COMPANY
222 NORTH BANK DRIVE • CHICAGO, ILLINOIS

For the lady with so many children she didn't know what to do . . .



TO THE MOTHER whose hands are full, and whose pennies *must* be pinched, BIOLAC comes as a godsend.

In the first place, BIOLAC—the new *liquid* modified milk for infants—requires just a simple mixing with boiled water...*only 15 minutes a day for formula preparation*—the washing of utensils, and all!

And in the second place...*no artificial food of comparable nutritional value costs as little as BIOLAC.*

But, this highly desirable simplicity and economy is by no means all. From *your* viewpoint, doctor, in the sum of its nutritional value, ready digestibility, and safety, BIOLAC actually resembles breast milk more closely than any artificial food or cow's milk modification heretofore available for infant feeding.

Only The Breast Is Simpler Or Quicker Than Biolac

And BIOLAC saves *your* time, too. See how simple it is to prescribe . . .

Dilute BIOLAC with an equal part of boiled water. Offer 2½ ounces per pound of body weight daily. (Slightly more dilute formulas are, of course, recommended during the newborn period, or when changing from other foods.)

BIOLAC is marketed only through professional channels, sold only in drug stores. No feeding directions are given to the laity. Send coupon for further information.

Biolac

MADE BY
THE BORDEN COMPANY



THE BORDEN COMPANY;
Prescription Products Division, Dept. I-109-L
350 Madison Avenue, New York, N. Y.

Please send me without obligation a copy of "Biolac, a New Liquid Modified Milk for Infants."

Name

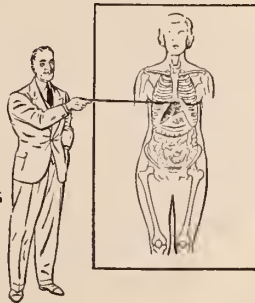
Address

City State

A word about the



Educational Program



... Hand in hand with the development of S. H. Camp & Company to the position of "world's largest manufacturers of scientific supports," has gone an ever-widening program of education in the proper fitting of these supports.

From the very inception of this business more than a quarter of a century ago, Mr. S. H. Camp realized that "a scientific support is truly scientific *only* if it is scientifically fitted." It takes research and study, inventiveness and craftsmanship to produce a scientifically correct garment — but an inexperienced, untrained fitter destroys its essential usefulness.

With this realization in mind, the Camp organization maintains a schedule of Instructional Courses for Surgical Fitters which are held annually in Chicago and New York and which are attended by representatives of reliable stores from all over the country. The last Instructional Course, held in New York recently, had the greatest registration in our history. Here, under the supervision of a medical staff, we teach the

scientific technique of fitting Camp Supports exactly as prescribed by physicians.

In addition to these large meetings, our educational staff is constantly instructing smaller groups locally throughout the country, besides visiting them periodically to check up on their efficiency and to assist with any special problems that may be encountered. Professionally edited reference books and other helpful literature are also made available to them.

S. H. Camp & Company has always believed in "education before sales" because we believe that only in that way can we be of utmost service to the medical profession and to those of their patients who require scientific support.



Supports

The Camp Transparent Woman, famous educational exhibit, seen by five million persons including about sixty thousand physicians. Now on display at the New York Museum of Science and Industry at Rockefeller Center.



Now

A WIDELY EMPLOYED MERCURIAL DIURETIC IN IMPROVED FORM

Excellent for INTRAMUSCULAR and Intravenous Injection

It has been conclusively proved that the association of theophylline with a mercurial diuretic greatly enhances the local tolerance to the mercurial component. After intramuscular administration, the mercury component is absorbed more rapidly and completely from the site of injection, the rate of excretion is proportionately increased, and the diuretic effect is more prompt and more pronounced than when the mercurial alone is administered.

Salyrgan-Theophylline (10 per cent of Salyrgan* with 5 per cent of theophylline in solution) is absorbed quickly (97 per cent within an hour) and entirely from muscle tissue. As a result local soreness and pain are greatly reduced in intensity or not experienced at all.

Write for leaflet describing Salyrgan-Theophylline, including discussion of dosage, directions for use and contraindications and side effects.

* Mercury salicylallylamide-o-acetate of sodium.

HOW SUPPLIED

Salyrgan-Theophylline solution is supplied in ampules of 1 cc., boxes of 5 and 25; and ampules of 2 cc., boxes of 10 and 25.

Accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

SALYRGAN-THEOPHYLLINE

"Salyrgan," Trademark Reg. U. S. Pat. Off. & Canada

Brand of MERSALYL
with
THEOPHYLLINE

WINTHROP CHEMICAL COMPANY, INC.

Pharmaceuticals of merit for the physician

NEW YORK, N. Y.

WINDSOR, ONT.

Factories: Rensselaer, N. Y. — Windsor, Ont.



In Addition to Vitamins A & D
Every Glass Now Contains Child's
Optimal Dosage of Vitamin B₁.

Cocomalt

ADDS ANOTHER VITAMIN

Year by year COCOMALT has kept abreast of growing nutritional knowledge. As the necessity of Vitamin D for routine administration was demon-

strated, COCOMALT added adequate Vitamin D. When rather widespread deficiency of Vitamin A was shown, this vitamin was increased in COCOMALT.

Now Vitamin B₁ has been added to COCOMALT—75 units per ounce. Yet the addition of this important vitamin has not increased the price nor lowered its palatability.

R. B. DAVIS COMPANY
Hoboken, New Jersey

Dept. P-10

Please send me a clinical package of COCOMALT.

Name

Street

City..... State.....

THE OBSTINATE CASE

FOR those cases of constipation that resist the mild stimulation of Mucilose alone, such as are encountered in senility and in pregnancy, regulation can be accomplished with the most recent development in this field—



MUCILOSE GRANULES WITH KASAGRA

Containing approximately 55% Mucilose and 45% dextrose, with 4 minims of Kasagra to the teaspoonful, provides bland, smooth bulk and lubrication in addition to gentle laxative action. The active factors are:

1. Mucilose—a hemicellulose obtained from *Plantago loeflingii*. Well recognized in constipation and colitis management for its remarkable ability to swell in the presence of liquid and form a mucilaginous, bulky mass, which lubricates the mucosa without leakage, and eases natural elimination.

2. Kasagra—a Stearns development. Each minim of Kasagra represents the gentle tonic laxative properties of one grain of cas-cara sagrada bark.

DOSE: one to two teaspoonfuls, followed by copious water.

Mucilose Available in Three Forms

Mucilose Granules with Kasagra, 4 oz. bottles

Mucilose Flakes, 4 oz. and 16 oz. bottles

Mucilose Granules, 4 oz. and 16 oz. bottles

FREDERICK STEARNS & COMPANY DETROIT, MICHIGAN

New York

Kansas City

San Francisco

Windsor, Ontario

Sydney, Australia

FREDERICK STEARNS & COMPANY
Detroit, Michigan

Dept. I.M. 10

Please send me a supply of Mucilose Granules with Kasagra for clinical test.

Name.....M.D.

Address.....

City.....State.....

OLD BELIEFS ABOUT IRON

IN THE ANCIENT EAST
KINGS AND PRIESTS
BELIEVED THAT TO TOUCH
IRON WAS DEFILING



MODERN *Iron* THERAPY HEMATINIC PLASTULES

Hematinic Plastules conform to present day requirements for *effective* and *economical* treatment of secondary anemia . . . Small dosage, easy assimilation and rapid response to treatment favor this type of medication over other forms of iron now in common use.

Hematinic Plastules are exceptionally well tolerated, even in anemias of pregnancy and other cases where the gastro-intestinal tract is likely to be easily upset.

SUGGESTED DOSAGE:

One Hematinic Plastule Plain three times daily

Two Hematinic Plastules with Liver Concentrate three times daily

TWO TYPES:

Hematinic Plastules Plain

Hematinic Plastules with Liver Concentrate

In bottles of 50's and 100's



THE BOVININE COMPANY • 8134 McCORMICK BOULEVARD • CHICAGO, ILLINOIS

I N T E G R I T Y

The RED LILLY stands for quality products, progress through research, and ethical dealing with the medical profession. These precepts are not an idle pose but are the basis on which the Lilly Laboratories have operated for over sixty years.



I-SEDRIN PLAIN (*Isotonic Solution Ephedrine, Lilly*)

I-SEDRIN COMPOUND (*Isotonic Solution Ephedrine Compound, Lilly*)

'I-sedrin Plain' and 'I-sedrin Compound' are ephedrine preparations designed to produce shrinkage of nasal mucous membranes without disturbing the normal physiology of the nose. Isotonicity is accomplished by addition of dextrose. 'I-sedrin Compound' also contains 'Merthiolate' (Sodium Ethyl Mercuri Thiosalicylate, Lilly) 1:5,000.

ELI LILLY AND COMPANY
I N D I A N A P O L I S , I N D I A N A , U . S . A .

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 76

OAK PARK, ILL., OCTOBER, 1939

No. 4

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

Editorials

GENERAL OFFICERS, 1939-1940

PRESIDENT.....JAMES H. HUTTON, Chicago
PRESIDENT-ELECT.....J. S. TEMPLETON, Pinckneyville
1ST VICE-PRESIDENT.....J. S. LUNDHOLM, Rockford
2ND VICE-PRESIDENT.....F. H. MULLER, Chicago
SECRETARY.....HAROLD M. CAMP, Monmouth
TREASURER.....A. J. MARKLEY, Belvidere

THE COUNCIL

E. H. Weld.....1st District, Rockford 1941
E. C. Cook.....2nd District, Mendota1941
J. S. Nagel.....3rd District, Chicago1940
L. E. Day.....3rd District, Chicago1942
Percy E. Hopkins..3rd District, Chicago1941
E. P. Coleman.....4th District, Canton1940
Ralph P. Peairs.....5th District, Normal1940
T. B. Knox.....6th District, Quincy1942
I. H. Neece.....7th District, Decatur1940
C. E. Wilkinson.....8th District, Danville1940
Andy Hall.....9th District, Mt. Vernon....1942
Henry G. Horstman.10th District, Murphysboro ...1942
Edw. S. Hamilton..11th District, Kankakee1941
S. E. Munson.....At Large, Chicago1942
Roland L. Green....At Large, Peoria1940
Rollo K. Packard...At Large, Chicago1941
Chairman of the Council.....L. E. Day, Chicago

EDITOR

CHARLES J. WHALEN.....25 E. Washington St., Chicago

GENERAL COUNSEL

EDWIN W. RAWLINS.....77 West Washington St., Chicago

LEGISLATIVE COMMITTEE

JOHN R. NEAL, *Chairman*.....Springfield

MEDICO-LEGAL COMMITTEE

J. R. BALLINGER, *Chairman*.....2724 W. North Ave., Chicago
R. O. HAWTHORNE, *Secretary*.....Kankakee

EDUCATION COMMITTEE

R. R. FERGUSON, *Chairman*...4013 N. Milwaukee Ave., Chicago
MISS JEAN MCARTHUR, *Secretary*.30 N. Michigan Ave., Chicago

PERMANENT HISTORIAN

IRVING S. CUTTER.....301 East Chicago Ave., Chicago

SCIENTIFIC SERVICE COMMITTEE

ROBERT S. BERGHOFF, *Chairman*..30 N. Michigan Ave., Chicago
HAROLD M. CAMP, *Secretary*.....Monmouth

PUBLICATION COMMITTEE

HARRY J. STEWART, *Secretary*.....715 Lake St., Oak Park

Outside of editorial or allied views or statements that are the authoritative actions of the Illinois State Medical Society, the organization denies responsibility for opinions and statements published in the ILLINOIS MEDICAL JOURNAL. Views expressed by the various authors and views set forth in various departments in the JOURNAL represent the views of the writers.

State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original article, advertising copy, cuts and all communications relating to advertising to ILLINOIS MEDICAL JOURNAL, 30 N. Michigan Avenue, Chicago.

Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is \$3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. \$4.00 per year for all foreign countries included in the postal union. Canada, \$3.50. Single current copies, 50 cents.

THEIR INCENTIVE WILL NOT BE PROFESSIONAL PRIDE BUT POLITICAL PROMOTION

The idea that the poor and "underprivileged" will find state medicine a boon is wholly delusive. An inevitable sequel to the adoption of state medicine will be to drive from California most of the able and self-respecting members of the medical profession. Those who remain, willing to prostitute their profession to the whims of politics, will be only the ragtag and bobtail of the fraternity. They will be politicians first and medical men second. Their survival will depend not on efficient service but on political favor.

Their incentive will not be professional pride but political promotion. No worse misfortune could befall a seriously afflicted person than to be subject to the mercies of a politician where the services of a physician are needed.—W. Kee Maxwell, *The Times* (Los Angeles.)

COUNTY MEDICAL SOCIETIES SHOULD DISCUSS WAGNER BILL

Every one of the two thousand or more of the County Medical Societies should devote, at least, one or more of the Fall and Winter monthly meetings to a joint session of doctors, dentists and druggists and allied professions together with members of the legal profession and the ministry.

At a conference of this kind, problems of common interest can be properly discussed. There is no question but what there is a movement on foot to make all scientific vocations bow to Government Paternalism. It is time for all the allied interests to get together and formulate plans to prevent regimentation, not only the medical, but all of the professions.

There is only one answer so far as the doctors are concerned, to the Wagner Bill and that is "NO!" We cannot depend upon the politicians to sponsor our cause in legislative halls. The rank and file will have to make whatever effort

is made to head off the attempted regimentation which is sweeping over the country like cyclone.

The rank and file which make up the membership of over two thousand component medical societies throughout the Nation seem to feel that the officers of their respective County, State and National organizations have been elected to do the job of fighting the aggression of bureaucratic control of everything and everybody. This impression is dead wrong and impossible of accomplishments. No army of Generals ever won a battle. It is the soldiers in the ranks who do the actual fighting. The officers of your county, state and national organizations can provide the ammunition and formulate strategy and certain techniques needed for victory. But the power to win or the lethargy and laziness, which means defeat, rests entirely upon the fortitude and alertness engendered by the personnel that makes up the component county and respective state societies.

ASK ANY INFORMED DOCTOR WHAT POLITICS WILL DO TO RESEARCH, PROFESSIONAL STANDARDS, HOSPITAL SERVICE?

The national committee to uphold constitutional government states that:

Under the guise of a humanitarian measure, the Senator Wagner National Health Bill puts the Federal government far into the field of medical care from which it will never retreat. Using Federal and State funds it will set up government hospitals and a vast system of tax-supported medical care that may, in the end, undermine and drive out of existence all private and church hospitals and the private practice of medicine.

In Russia and Germany, where such state medicine was first established, with the doctor under a politically-controlled set-up, all other professions—the clergyman, the lawyer, the engineer, the architect—as well as business itself have passed under State control.

Senator Wagner's bill, while starting with a comparatively small appropriation, compels unlimited future Federal spending. For 1940 it appropriates only \$98,250,000; in 1941, \$123,500,000; and 1942, \$234,000,000; but, for each fiscal year thereafter, it calls for "*A SUM SUFFICIENT TO CARRY OUT THE PURPOSES*" of the ACT! Thus it sets up an unlimited mortgage upon the taxpayers with no check except

the willingness of State politicians to have their States assume responsibility for health promotion hospitals, child care, sickness, disability, etc. \$850,000,000 is already mentioned as the probable annual figure within the first decade.

As presented to the public, through press releases issued from Senator Wagner's office, the bill seemed harmless. Only after a careful study had been made by experts of its 48 printed pages did its real implication become clear—an encouragement to each State to go as far into collectivism as possible, in order to get maximum benefits from the United States Treasury. Ask the ablest doctor you know what politics will do to research, professional standards, hospital service.

THE AMERICAN MEDICAL ASSOCIATION HAS NOT REVERSED ITS POLICY

The House of Delegates of the American Medical Association at its special session in Chicago, 1938, approved "Cash Indemnity Insurance as a method of paying medical costs. Unthinking exponents of socialized medicine have endeavored to twist this approval into a reversal of policy. There are, however, basic differences in the most vital points in the two systems.

For clarification purposes we quote from a release from the JOURNAL of the American Medical Association, October 8, 1938, as follows:

Practically no one—and certainly not the American Medical Association—has ever opposed the *payment of medical bills through insurance*. The medical profession has objected most strenuously and continues to object to the *compulsory wholesale purchase and retailing* of medical service to patients by an insurance company, government agency, or any other organization or individual. This objection rests on the proof afforded by vital statistics that during this process of purchase and retailing the medical service is adulterated by politics and depreciated by administrators until it loses much of its value as a protection of the public against disease and death.

Sickness insurance in most countries arose out of systems of contract practice, the administrators of which wished to keep control of the medical service. Politicians were quick to see that service benefits could be sold to voters unable to judge their value for greater political assets

than could cash benefits. In the most commonly advocated plans of voluntary and compulsory sickness insurance, premiums are collected in cash and then transformed within the insurance administration into service benefits for the insured. All other systems of insurance collect premiums and pay benefits in the medium of exchange. The two sides of the balance sheet are then written in the same units. It is much more difficult to tamper with the bookkeeping for political purposes or to deceive the sick as to the benefits received than in systems in which receipts are counted in cash and benefits are delivered in an unmeasurable service. Indemnity insurance collects the premiums in cash and pays cash to the insured on a definite scale in accordance with the economic losses suffered from sickness.

There would be fewer complications and far less red tape in such an indemnity system than in one with service benefits. Free choice of physician would be automatic. Restrictions on prescribing and other phases of treatment would be unnecessary, as there would be no need to deceive the patient as to the quality and extent of the service he was receiving.

This is not a proposal for an untried experiment. Such a system is in almost universal use by commercial insurance companies. It has been introduced with success into some industrial plans. It is the plan on which old-age, unemployment, and all other forms of social insurance are conducted. There is a decided trend in this direction in even the compulsory systems, as shown by certain features of the French and Swedish sickness insurance plans; both of these, however, are still more or less hybrids of the indemnity and service systems. They retain so many of the evils of the latter, aside from their governmental, compulsory feature, that they cannot be offered as patterns to follow.

SENATE COMMITTEE SUBMITS REPORT OF THE TESTIMONY AT THE WAGNER BILL HEARING

In August the committee on education and labor of the United States Senate which conducted the hearings on the Senator Wagner's Health Program Bill (S 1620), submitted a report (No. 1139) to the Seventy-Sixth Congress. Practically all of the testimony given at the hearings appeared in issues of the *Journal*

of the American Medical Association. The report was forty-two pages long. An excellent digest appeared in the *Journal of the American Medical Association*, August 19, 1939, page 685, as follows:

UNITED STATES NATIONAL HEALTH PROGRAM: WAGNER BILL, S. 1620

Digest of the Preliminary Report from the Committee on Education and Labor of the United States Senate*

In submitting its preliminary report (Senate Report No. 1139, Seventy-Sixth Congress, First Session) the sub-committee of the Committee on Education and Labor points out that it is in agreement with the general purpose and objectives of the Wagner Bill, Senate 1620, establishing a National Health Program; it wishes, however, to give this legislation additional study and to consult further with representatives of lay organizations and of the professions concerned.

The subcommittee states that it intends to report out an amended bill at the next session of Congress.

I. NEED FOR A NATIONAL HEALTH PROGRAM

The preliminary report states that this bill is the result of several years of preparatory study and discussion, and that it grew out of the movement which led to the Social Security Act of 1935, followed by the National Health Conference, the National Health Survey, and various other activities.

The evidence presented shows convincingly, the Committee believes, that there are great opportunities to improve health conditions in this country. It is felt that we should be able to make still further improvements on the excellent records in the field of health that prevail today. Special reference is made to the opportunity to save lives threatened by tuberculosis. It is said that the funds available for venereal diseases are sufficient to make only a beginning in this campaign.

The report emphasizes that 11,000 mothers died in childbirth in 1937 and alleges that more than one-half to two-thirds of such maternal deaths are preventable. It is said also that each year nearly a quarter of a million women do not have the advantage of a physician's care at the time of delivery. Vastly more could be done than is being done to conserve the lives and health of children.

The report indicates the belief that only those in the upper income groups receive anything approaching adequate dental care.

There is a discussion of the extra hazards associated with industry, and much is said of the need of new methods of medical service in rural areas.

Emphasis is placed on the statement that there is wide variation among the states in the availability of hospital facilities. With regard to general hospitals, the number of available beds varies among the states from a maximum of 5.2 to a minimum of 1.3 for every thousand of population. The record for the country as a whole indicates an average of 3.1 beds for every thousand persons, and the report asserts that adequate standards for general hospitalization call for an aver-

age of 4.5 beds in general hospitals for every thousand persons.

There are also great differences among the states in the availability of beds in mental institutions.

COSTS OF ADEQUATE HEALTH SERVICES

The preliminary report calls attention to the fact that there are various factors which explain why large proportions of the population fail to receive the medical and health service they need. The Committee recognizes the fact that ignorance, reliance on unsuitable methods, great distances from physicians, and so on, play a part, but it says that, from the evidence placed before it, the major reason is lack of financial ability on the part of large portions of the population to meet the costs of needed services. It has accepted the idea that many who could buy medical care on some budget basis find it difficult to purchase service on the customary basis of paying for the care when the need for the care arises.

Figures are cited from the National Health Survey to show that the average number of physician's calls per case is higher among the well-to-do than among the poor. The committee repeats the statement of a witness for the American Medical Association to the effect that among the one-fourth of the states with the highest percentage of population filing income tax returns there was an average of one general hospital bed for 261 persons in the population and that these beds were being used 65.5 percent of their capacity. In the one-fourth of the states at the other end of the economic scale, there are 549 persons per general hospital bed with an average occupancy rate of only 52 per cent.

Much emphasis is placed on the report supplied by Dr. R. G. Leland, Director of the Bureau of Medical Economics, who testified on behalf of the American Medical Association and who supplied factual data on medical economics.

The Committee said: "We cannot emphasize too strongly or say too often that when we speak of inadequate medical care, of insufficient services received by large numbers of people, or of the economic problems in paying for care, we are not criticizing the physicians or hospitals or others who furnish services. They have long been performing humanitarian services deserving the highest praise. It is not the responsibility of doctors or hospitals or related groups that large sectors of the population have limited economic resources."

The Committee paid tribute also to the work of the voluntary organizations and stated that "every right-thinking citizen will insist that in the health program for the future there shall be adequate provision for the continued vigorous activity of the voluntary organizations."

DISABILITY INSURANCE

The Committee believes that the program of social security which this country has established is incomplete without protection of the individual against the risk of losing his earning power because of disability. The Committee feels that, if adequate protection against the risk of disability is to be developed, insurance must

be made obligatory, as has already been done in the case of protection against unemployment in old age.

THE NEED FOR FEDERAL ACTION

The Committee argues that it does not propose a new departure or a new type of activity for the Federal Government. "It is our opinion," it says, "that the administration and operation of health services should be left to the local communities and to the states, and that the Federal Government should not control or dictate to the local communities or states in the management of these functions. . . The primary opportunity for the Federal Government is to give financial and technical aid to the states."

It is pointed out that the Federal Government is now providing aid to the states for a variety of purposes having to do with the general welfare and with health. The Committee points out that the public hearings have shown that there is a broad and substantial support now for federal legislation to strengthen, extend and improve the health services of our people. Scarcely a witness raised objection to the objectives of the bill, although representatives of some organizations presented serious criticisms.

II. PRINCIPLES UNDERLYING THE BILL

Here the Committee presents an analysis of the bill, together with statements by Abel Wolman, Dr. Felix J. Underwood, Dr. A. T. McCormack, Dr. Thomas Parran, and Miss Katharine Lenroot, in support of the form of S. 1620.

III. PRINCIPAL PROVISIONS OF THE BILL

There follows an analysis of the bill as it now stands and a table of comparison of present appropriations for health purposes under the Social Security Act and the appropriations proposed to be authorized by S. 1620.

IV. SOME SPECIAL PROBLEMS RAISED IN THE HEARINGS

It is pointed out that some witnesses objected to the grant-in-aid pattern embodied in the bill. The Committee felt that the bill would appear to follow a fundamentally sound principle when it leaves to the states the decision as to the population groups to be served by their plans. The Committee has under consideration the question of providing funds for federal support of professional education, administrative training and research. The Committee is prepared to make the intention of the bill to provide for health education of the public clear and specific.

There is much discussion of the recommendation that one federal agency should administer medical affairs. It is pointed out that further study is required on the matter of relationship between the Federal Security Administration and the Children's Bureau of the Department of Labor and between them and other federal agencies. There is also the question of having a single federal advisory council or a national health council instead of several federal advisory agencies.

The Committee considered particularly the question of the protection of minority population groups and

asserts that the Committee believes that there should be just and equitable allocation of funds according to the needs for services.

On the question of the eligibility of practitioners from various schools of healing, the Committee states that it is impressed by the fact that the licensing and regulation of practitioners in medicine and allied fields have always been within the jurisdiction of the states and not under the Federal Government, and the Committee feels that the powers should be left in these states as at present and that, therefore, the bill should not include any specifications on these points except a provision to the effect that nothing in the bill should be construed as infringing on the authority of each state to continue to regulate the practice of the healing arts.

On the question of the construction of hospitals, the Committee states that this title is not intended to lead to any unsound activity. Before any new hospital construction is undertaken, the available beds in qualified, existing, nongovernmental and governmental hospitals should be used, provided the type of service meets accepted standards and the charges for the use of such beds are reasonable. The Committee says, "We have no intention whatever of endorsing any proposal that would encourage the building of hospitals where adequate facilities exist or that would encourage the building of public hospitals where private hospital construction would, in the normal course of events, meet community needs." It says: "Furthermore, our Committee intends to prepare amendments to Title 12 to assure that federal aid under this title will require unequivocally clear showing of need through impartial state and local surveys, and clear satisfaction of federal requirements that such needs exist, in addition to reasonable demonstration as to future continuing support of the hospitals." The report says that "the Committee is agreed that the bill should be amended by addition of positive provisions that qualified hospitals and agencies, both public and private, may be utilized in the state plans."

V. CONCLUSION

"S. 1620 has received wide support from large and representative organizations. Its objectives are non-controversial. Our Government is dedicated to promoting the welfare of the people and the protection and improvement of health and well-being. Making available to all of the people the great life-saving services which modern medicine has to offer is an objective which every right-thinking citizen supports.

"The Committee is convinced that federal legislation along the general lines followed by S. 1620, based upon federal-state cooperative programs, is necessary to strengthen the health services of the nation and to make provision for the progressive and effective improvement of health conditions in all parts of the country and among all groups of people. The needs are large, and an adequate program to put knowledge and skill more effectively to work will involve considerable expenditures of funds. The program must, therefore, be worked out with great care. We are confident that such a program can be worked out and that the

expenditures will be sound national investments which will bring large returns. The rôle of the Federal Government should be primarily to give technical and financial aid to the states.

"A critical analysis of the present provisions of S. 1620 shows a number of points at which its specific purposes can be more clearly stated and its provisions improved. The Committee has not yet reached any conclusions concerning the precise rate at which the Committee is agreed on the general principle that the proportion of federal assistance should be greater to those states in which there is the greatest need for the services contemplated under the bill. The Committee is prepared to augment the provisions of the bill—if additional provisions are needed—to assure that the amount of federal assistance would in no instance be in excess of clearly demonstrated need.

"Some misunderstandings seem to have arisen and criticisms have been expressed concerning parts of the bill. Some witnesses have assumed that it would bring about revolutionary or dangerous changes in medical care. We think these fears are unwarranted, but we will welcome further suggestions as to specific amendments which may safeguard the objectives of the bill. Medical science has reached a commendable status in this country. The bill should encourage the further evolutionary development of medical science, teaching and practice.

"The Committee has received the assurances of many lay and professional groups that they will be prepared to furnish further information and suggestions. We expect to consult further with representatives of these groups.

"We have not yet had adequate time to make exhaustive study of all of the problems involved in the legislation proposed by S. 1620. The Committee will continue its study of S. 1620 so that a definite report on the proposed legislation can be submitted soon after the beginning of the next session of the Congress."

The report of the senate committee on education and labor, as submitted by its chairman. Senator Murray as well as the illuminating digest in the *Journal of the American Medical Association*, should be read and thoroughly digested by every member of the medical profession. The report indicates the nature of federal legislation that will, without question, be proposed in January, 1940 when the seventy-sixth congress convenes. If some of the proposed legislation is then enacted it will to a certainty make radical changes in a medical service in the future.

THE PROBLEM OF MENTAL DEFECTIVES

Rock Sleyster, President of the American Medical Association at the 1939 St. Louis meeting, summarized the problem of mental defectives.

We quote in part from his address as follows:

"They are imposing in their scope. An understanding of the human mind and of human thinking may aid in the solution of problems of government.

"The evidence is available that at least 10,000,000 persons of the 130,000,000 in this country bear within their bodies elements which may result occasionally in the production of a feeble-minded child.

"On any day nearly 1 per cent of all the people in this country, actually 1,300,000 people, are incapacitated by epilepsy, by feeble-mindedness and by various types of mental illness. The figure is obtained by adding to 550 of every 100,000 of our population who have nervous and mental diseases and who are not in hospitals the total number now being cared for in sanatoriums, hospitals and other institutions.

"Patients with mental disease occupy 47 per cent of the hospital beds in this country. For the country as a whole, the number of persons hospitalized for mental disease increased more than 40 per cent from 1926 to 1936. The estimated cost of maintenance of these beds is \$230,865,000, with an additional cost of \$18,178,000 for patients under private care.

"Three hundred Americans enter institutions for mental patients daily for the first time. In addition to hospitalized patients, several millions are more or less incapacitated because of mental illness or disturbances. In such states as Massachusetts and New York, where hospital facilities are most nearly adequate and where more reliable statistics are available, one of 150 adults in the present generation population is hospitalized because of mental disease.

"About 1 per cent of the adult population were under care in mental hospitals at some time during the past year. From 5 to 6 per cent of the general population will spend some time in mental hospitals during their lifetime. Including non-hospitalized persons with mental illness, 2 per cent are incapacitated some time of each year.

"At some time in their lives 10 per cent of the adult general population will be more or less incapacitated by mental illness. Accepting studies made in Massachusetts, 57 of every 1,000 male infants and 53 of every 1,000 female infants will live to be committed to mental hospitals. It has been estimated that loss of earnings of hospitalized mental patients, plus, the cost of mainte-

nance, represents an annual economic loss in this country of \$783,586,000. These figures, bluntly stated, define the scope of our problem.

"Among the serious problems waiting scientific solution are epilepsy, feeble-mindedness, the spastic child and dementia praecox.

"Epilepsy, or falling sickness," the doctor said, "has been known since Homer, yet medical progress toward relief is still 'very slight.' Softening of the brain can only be helped when diagnosed early, but the early discovery is difficult. It may take several lifetimes before physicians know how to control dementia praecox, the insanity of adolescence, and schizophrenia, the personality phobia.

"There are other mental troubles," he said, "with names so technical the public does not even know the words. Feeble-mindedness, one of the worst mental curses, must look to the scientists investigating genetics and heredity for hope in limiting production of children unable from birth to meet the mental needs of civilization. Neither is there any evidence that laws regulating sterilization of the parents of the feeble-minded will in any serious manner diminish the total number of feeble-minded."

Dr. Sleyster declared if national control over illness is to bring about a breakdown in the character of our people so that they will, like many a foreign nation, yield to the wills of dictators and dictator nations, the price will have been far too great."

HAVE YOU READ THE FOLLOWING?

DOCTOR OF THEIR CHOICE. A new and subtle challenge to defenders of private practice of medicine. By Mr. Michael Davis (Survey Graphic, July, 1939).

SOCIALIZED MEDICINE. By Maxine Davis. An analysis of health insurance. (Good House-keeping, August 1939).

A CHALLENGE TO MEDICINE. A symposium on sickness insurance by Drs. Haven Emerson, Roger S. Sidall, and Joseph T. Smith. (Atlantic Monthly, August, 1939).

GROUP MEDICINE AT WORK. By Frank J. Taylor. The story of California's Ross-Loos Medical Group. (American Mercury, August, 1939).

SENATORS, DOCTORS, NATIONAL HEALTH. By Michael M. Davis Survey-Mid-Monthly, September, 1939).

Note: Mr. Davis in his article in *Survey-Graphic*, hazards the prediction, based chiefly on personal observation in the course of his studies, that the family in the upper income brackets is likely to have . . . not one family doctor who in turn guides them as specialists are needed . . . but four or five specialists, more or less hazardly selected. Only the children in charge of a Pediatrician will have anything resembling a co-ordinated service.

Mr. Davis in the current issue of *Survey*—The Mid-Monthly for September, 1939, gives an apparent review of the preliminary report of the sub-committee of the Senate committee on education and labor. Mr. Davis speaks enthusiastically for the so-called committee on physicians and sarcastically belittles the American Medical Association.

DOCTOR COLWELL'S DAILY LOG FOR PHYSICIANS

The "Daily Log For Physicians" is issued by the Colwell Publishing Company, Champaign, Illinois. Price \$6.00.

No more striking testimonial for the popularity of this physicians' aid can be given than the fact that 875 Illinois physicians used the Daily Log in 1939.

The work provides a simple financial record for the Physician's desk. 500 pages, loose leaf. All a physician—or his assistant—need do is record charges, receipts and expenses as they come along. Then with simple arithmetic, a few minutes' time, important figures appear. Net profit for the month, for the year, income tax essentials otherwise so laboriously figured, collection losses—these and other items are easily located, held for future reference.

This is the thirteenth edition of the Daily Log. For over a decade this volume has been a first aid to every busy doctor. Since the beginning of the publication in 1927, it has been subjected to yearly revisions and annotations though the general principles remain the same.

For the benefit of those physicians not already acquainted with the principles of the LOG, they may be summarized briefly. A thirty six line page is provided for each day on which are recorded each day's services, receipts. Charge business, cash business, receipts on accounts are totaled daily and carried forward to a monthly

summary. Expenses are classified and totaled, and a little simple arithmetic reveals net profits for the month and for the year to day. Vital income tax figures are grouped on the annual summary sheet, provided in triplicate this year.

The financial side of a practice is the most immediate concern of the LOG, but in addition to financial sheets are memoranda forms for obstetrics, surgery, narcotics, notifiable diseases, inoculations, social security taxes.

Bound with screw posts in a durable and attractive fabricoid cover, walrus-grained, black with silver trim, it will do credit to any office. Leaves may be removed for typing, be replaced or supplemented with additional forms secured from the publisher. Operation requires only faithful recording and simple arithmetic—any doctor or assistant can form the "habit" in a few weeks.

Most doctors already adequately provide adequate records for their patients—too few keep adequate records of their own financial well-being. The LOG was designed by a practicing physician to let him know the condition of his own practice. Offered for general sale first in 1927 it has progressed from year to year as new needs appeared, but is well standardized in principle and has won a wide circle of constant friends.

The announcement of a new edition of the DAILY LOG (the thirteenth) always is a reminder that the new year is approaching, that income tax returns will again be due before long.

INTERNATIONAL SURGEONS' MEETING

The biennial assembly of the International College of Surgeons will be held in New York at the Hotel Roosevelt May 21-24, under the chairmanship of Dr. Andre Crotti, Columbus, Ohio, international president. Applications for places on the program should be sent to Dr. Fred H. Albee, 57 West Fifty-seventh Street, New York. General information as to scientific and commercial exhibits may be obtained by addressing Dr. Edward Frankel, Jr., 217 East Seventeenth Street, New York.

TULAREMIA IN ILLINOIS

Because of the increased prevalence of tularemia in Illinois during the past season, the state conservation department's plan to move 5,000 rabbits from the southern counties to farm lands and marshes in the northern part has been abandoned. More than thirty-eight deaths from tularemia were reported in the state during the past year and 489 cases of the disease have been recorded since Jan. 1, 1938, newspapers announced January 19.

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
Ralph Peairs, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

R. K. Packard, M. D.
C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

Address all letters and communications to the Chairman.

The continued favorable comment in the press, both lay and medical, of the decision of Judge Proctor last month, has been most encouraging to the medical profession. However, we should not be lulled into a feeling of false security by the opinion. The Department of Justice insists that the case will either be appealed or a new indictment of the men previously named will be obtained. Apparently we must continue to watch for new developments and be ready to fight any new attempts to intimidate and coerce the medical profession into abandoning the fight against control of the practice of medicine by the government.

On Page 22 of the September issue of *Medical Economics* appears a new idea in regard to publicizing the fight of the medical profession against control. A stamp, to be used in a manner similar to Christmas Seals against Tuberculosis, on the back of envelopes was shown. This stamp says KEEP POLITICS OUT OF MEDICINE. IT COSTS YOU MORE. IT GIVES YOU LESS. ASK YOUR DOCTOR. This stamp is available at the present time in quantities of 100 for 20 cents from Medical Economics, Inc., Rutherford, New Jersey. There certainly can be no valid objection to the use of such a stamp by anyone who wishes to do so. The value of use of the stamp might be controversial. Surely, it would be necessary for the medical profession to be adequately informed on the subject so that they can answer the questions that will be asked by recipients of such stamped letters, who heed the admonitions on the same. It does not suffice to make condemnatory statements in regard to so-called State Medicine. Rather good and sensible arguments must be presented for the continuation of the present plans and the dangers of the new plan must be known and explained fully. For the average physician to do this will necessitate his reading up on the subject, as we have been stressing the past several years. Again, let us repeat, Do not let John do it,

In this same issue of *Medical Economics* is an article by Henry Rof Brown M. D., the first Medical Director of the Group Health Association in Washington, D. C. Surely Dr. Brown must know what happened prior to his resignation from the office of Director and the article is most interesting. Its reading will help to give one a fine general view of what happened at Washington. Also it should furnish him with ammunition to be used in proving that political and governmental control of the medical profession, is neither advisable or practical from either the viewpoint of the laity or the medical profession, even though the governmental authorities continue to insist that it is necessary and successful. Somewhere we have read during the current month a very critical article by a governmental official in regard to the action of lawyers, particularly in regard to fees charged. Here again was the threat that unless the legal profession listened to the suggestions of the government, it might be necessary to start a reformation of the manner in which the profession of the law is conducted. The writer is very sorry to read such articles, but should not have been surprised, for why should the legal profession be overlooked in the general reformation of the professions. We fear that some of the legal profession will be somewhat disturbed by the threat to their profession and a little less smug in their attitude to the other professions. We must watch the growth of this threat.

All over the United States are appearing new plans for medical care for the low income group under the jurisdiction and management of the medical profession. The nature of the plans are almost as many as the organizers of the same. As we all know the problem is different in every state, city and community. To have one plan meet the needs in every community is manifestly impossible to anyone at all conversant with the problems of the care of the sick. Indeed, that is one of the best arguments against the centralization of control at Washington by

politicians. A comprehensive plan in California is well under way. It has active cooperation of the majority of the medical profession, who in addition to working under it have financed the organization work as well as helping to build up the surplus necessary to qualify under the insurance act by advancing money themselves. In spite of well worked out plans and most praiseworthy cooperation, the plan has not been successful from a financial viewpoint of the medical profession, who are obliged to accept a percentage discount on their bills, which is much greater than was either expected or compatible with continuation of the plan under the present set-up. It is too early to do more than observe the plan, and it is to be hoped that the difficulties encountered will be worked out shortly. A similar plan in New York has encountered the same difficulties and the medical profession is accepting a steep cut in their charges. Wisconsin is trying out three different plans in different sized communities in different parts of the state. No definite report of the results has been made at this time, but again rumor is that they are encountering some financial difficulties, which so far have been met by the medical profession receiving less for their services than they had been accustomed and had been led to believe would result from the acceptance of the plan.

All the above plans are for Voluntary Insurance, where employees of certain factories or stores are insured in Groups and the monthly premium is deducted from their salary at the office of the plant or store. This is entirely different from the Compulsory method advocated in the so-called Wagner Bill, S. B. 1620. In a recent talk with a member of the Contact Committee appointed by the Officers of the American Medical Profession to confer with the Interdepartmental Committee in regard to S. S. 1620, the writer learned that the Subcommittee which has been holding hearings on the bill, many of which were reported in the *Journal of the American Medical Association*, is practically ready to report on the bill and that they may draft a bill of their own unless one is presented by the American Medical Association. It is to be hoped that the problems resulting from the war in Europe will really give the reformers some things of importance to think about and they will be too busy to reform the rest of us.

Meanwhile it is fitting that the medical profession should attack the problem of the care of those in the low income group and see if they can establish a satisfactory plan. The Michigan State Medical Society has just adopted a most comprehensive plan for the voluntary care of those in the low income group. It has been worked out carefully and in the opinion of the writer who has just returned from two days spent listening to the discussion of the same by the Council of the Michigan State Medical Society bids fair to be the most successful of all the plans. Again, all the preliminary work has been done by the medical profession including the financial backing of the same. This included the setting up of a surplus fund of \$10,000. It is to be hoped that it will develop with the fulfillment of the promise it shows at this time. You may be sure that it will be watched with great interest by this Committee, particularly that portion, to whom has been assigned the study of a similar plan for Illinois as instructed by the House of Delegates of the Illinois State Medical Society at its last annual meeting.

E. S. Hamilton, M. D.

Chairman of Committee.

CORRESPONDENCE

TO THE MEMBERS OF THE ILLINOIS STATE MEDICAL SOCIETY

The Officers of the Chicago Medical Society, hosts to the Inter-State Postgraduate Medical Association of North America, extend to you a cordial invitation to attend the meetings and clinics of this great postgraduate assembly.

The pre-assembly clinics, and post-assembly clinics, will be held on the Saturday preceding the regular program—October 28, and the Saturday following the regular assembly program—Nov. 4, at hospitals in Chicago.

The Assembly will begin Monday, October 30 and extend through Friday, November 3.

All meetings will be held at the Palmer House. Sessions begin at 8:00 A. M. and close at 11:00 P. M. daily.

Cordially yours,

Robert H. Hayes, M. D.,

Gen'l Chairman for Chicago.

PROGRAM

Wednesday, October 18, 1939

9:00 A. M. to 5:00 P. M.

- 9:00-10:15 A.M.—Ward walk.
 Ward 33—Dr. James J. Callahan.
 Ward 34—Dr. Carlo S. Scuderi.
 10:20-11:30 A. M.—Operative Clinic in Surgical Amphitheater. Dr. William R. Cubbins.
 11:30-1:00 P. M.—“Fractures of the Spine and One-half Hour of Questions.” Dr. James J. Callahan.
 1:00-2:00 P. M.—Lunch.
 2:00-2:30 P. M.—Operative Period. Dr. George D. Apfelbach.
 3:00-4:00 P. M.—“Fractures of the Forearm,” including Colles. Dr. Philip H. Kreuscher.
 4:00-5:00 P. M.—“Fracture Demonstrations.” Optional.

SCIENTIFIC PROGRAMS

The Scientific Programs of the Chicago Medical Society:

The Chicago Medical Society is planning a series of all day programs for the consideration of disease to be held on the third Wednesday of each month from October through April. In the morning and afternoon, there will be clinics, demonstrations, lectures and round table discussions on the general subject, certain aspects of which will be presented at the evening meeting. The day time portion of the program will be held in one or another of the teaching institutions of the City but will be a program of the Society presented in a certain institution rather than a program of the institution presented to the members and guests of the Society. The evening meetings will be held at the Chicago Woman's Club Theater on Eleventh Street near Michigan Boulevard. Detailed programs will be furnished each month.

The topics to be considered at these meetings are as follows:

October 18, 1939—Fractures at Cook County Hospital. 8:30 P. M. The Treatment of Skull Fractures—Harry E. Mock, Chicago.

November 15, 1939—Nutritional Deficiency Diseases at Thorne Hall on the Chicago Campus of Northwestern University. 8:30 P. M. The Vitamin B. Complex and Pellagra—Tom D. Spies, Cincinnati, Ohio.

December 20, 1939—Cardiovascular-Renal Diseases at one of the institutions in the West Side Medical Center. 8:30 P. M. Arteriosclerosis Obliterans: The

Modern Conception of Its Social Significance, Diagnosis and Treatment—Irving S. Wright, New York City, N. Y.

January 17, 1940—Industrial Medicine and Traumatic Surgery at St. Luke's Hospital. 8:30 P. M. The Evaluation of Disability Due to Cardiovascular Disease.

February 21, 1940—Topic and speaker to be selected.

March 20, 1940—Endocrinology at the University of Chicago Clinics. 8:30 P. M. The Misuse of Biologicals in Medical Practice.

April 17, 1940—Obstetrics and Care of the New Born. 8:30 P. M. Maternal and Infant Mortality in Chicago 1935-39.

A luncheon for members and guests will be arranged at or near the institution, in which the clinical program is to be presented. A dinner will be held at the Chicago Woman's Club before the evening meetings.

That sufficient accommodations may be provided at the clinical meetings during the day, and sufficient reservations made for the luncheons and dinners, members and guests are advised that admission will be by ticket only. Tickets must be obtained not later than the Saturday preceding the meeting. The price of the luncheons will be \$0.50 and of the dinners \$1.50. For clinic, luncheon and dinner tickets apply to the Chicago Medical Society, 30 North Michigan Avenue, Chicago, Phone Central 3026.

All members of the Illinois, Wisconsin, Iowa, Indiana, Michigan and other State Medical Societies are cordially invited to attend these all day programs.

The detailed program for Wednesday, October 18, is as follows:

- 9:00 A. M. to 1:00 P. M. Clinics at the Cook County Hospital.
 1:00 P. M. Luncheon at the Progressional Schools Y. M. C. A., Congress and Wood streets.
 2:00 P. M. to 4:00 P. M. Clinics at the Cook County Hospital.
 6:30 P. M. Dinner at the Chicago Woman's Club.
 8:30 P. M. The Treatment of Skull Fracture—Harry E. Mock. Discussion by Loyal E. Davis, Casper Epstein, Eric Oldberg, George W. Hall.

Remember to get Clinic, Luncheon and Dinner Tickets before Oct. 14, 1939.

Program Committee

Nathan S. Davis, III, M.D., President
 H. Prather Saunders, M.D., Secretary
 Herman L. Kretchmer, M.D.
 Charles H. Phifer, M.D.
 Austin A. Hayden, M.D.

SCIENTIFIC SERVICE COMMITTEE SOMETHING NEW IN POSTGRADUATE EDUCATION

The Council of the Illinois State Medical Society, at a recent meeting, accepted the recommendation of the "Committee to Study Post-Graduate Education in Illinois" and authorized three or four one day Conference Courses to be held in key cities of the state. Arrangements for these courses and the selection of the cities—one in the southern section of the state, one in the central and one in the northern—will be governed by the Scientific Service Committee.

While details have not been perfected a conference course will probably consist of a scientific program beginning at 9:00 A. M. and running every thirty minutes until noon and again from 2:00 to 5:00 P. M. with a dinner meeting from 6:00 to 10:00 P. M.

In this way approximately fifteen subjects will be covered in one day. The speakers and subjects will be selected by the Councilors in the respective district and the local county secretaries in conjunction with the Scientific Service Committee. These meetings will be open not only to members of the local county society, but neighboring counties as well.

A detailed report concerning the location of these courses as well as the complete program of speakers and subjects will appear in the next issue of the JOURNAL.

Robert S. Berghoff, Chairman,
Scientific Service Committee.

THE PUBLIC MEETINGS OF THE CHICAGO MEDICAL SOCIETY

The Chicago Medical Society is planning a series of public meetings to be held at the Chicago Woman's Club Theater on Eleventh Street near Michigan at 8:30 P. M. on the first Wednesday of each month from October through April. Topics of popular interest and importance will be presented by members and guests of the Society who have a thorough knowledge of the subject and the ability to give an address that will inform and at the same time entertain their audience. Seats on the main floor of the theater will be reserved until 8:25 P. M. for holders of tickets. Those remaining vacant on the floor at that hour and the seats in the balcony will be open to the general public. Tickets may be

obtained free on application to the office of the Chicago Medical Society, 30 North Michigan Avenue, Chicago, or through your doctor. You may apply for tickets admitting to individual meetings or to the whole series.

The program for this series of meetings follows. When only the topic is announced it is because the speaker has not been definitely selected.

October 4, 1939. "Are You and Your Children Being Exposed to Tuberculosis?"

"Where to Find Tuberculosis"—W. H. Tucker, M. D., Health Commissioner of Evanston.

"How to Find Tuberculosis"—R. G. Block, M. D., University of Chicago, School of Medicine.

"How to Treat Tuberculosis"—J. A. Britton, M. D., Northwestern University Medical School.

November 1, 1939—"Famous Madcaps of History"—Winifred Overholser, M. D., St. Elizabeth's Hospital, Washington, D. C.

December 6, 1939—"The National Health Program and Public Health."

January 3, 1940—"When Smallpox Comes"—Victor J. Heiser, M. D., New York.

February 7, 1940—A Joint Meeting With the Chicago Heart Association.

March 6, 1940—A Joint Meeting With the Cancer Committee of the Chicago Woman's Club.

April 3, 1940—"Infectious and Contagious Diseases and Their Relation to Chronic Disease"—Archibald Hoyne, M. D., and George H. Coleman, M. D.

In addition to this series of meetings at the Chicago Woman's Club Theater the Society is sponsoring public meetings on the economic aspects of medicine to be held in its Branches under the auspices of the Society, the Branch and in some instances of some local organization. A debate is being arranged that will be held at the Nichols School Auditorium in Evanston under the auspices of the Society, its Evanston Branch and the Lincoln School Association of Parents and Teachers which will be held on November 7, 1939. A joint public meeting with the South Chicago Branch is to be held on October 29, 1939. The dates and locations of such meetings and the topics and speakers will be announced as soon as definite arrangements are made. Some of these meetings in the Branches will be in the form of debates, others round table discussions and others addresses followed by open forums.

Program Committee

N. S. Davis, III, President H. L. Kretschmer
H. P. Saunders, Secretary C. H. Phifer
A. A. Hayden

UNITED STATES CIVIL SERVICE EXAMINATIONS

Medical Guard-Attendant, \$1,620 a Year

Medical Technical Assistant, \$2,000 a Year

Optional Branches (Medical Technical Assistant)

1. Clinical Laboratory Technique.
2. Pharmacy.
3. X-ray Laboratory Technique.

U. S. Public Health Service, Mental Hygiene Division, Federal Security Agency.

Applications must be on file with the United States Civil Service Commission at Washington, D. C., not later than the following dates—

(a) October 23, 1939, if received from States other than those named in (b) below.

(b) October 26, 1939, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming. This additional period is granted (because of the longer time required in transit) for receipt of applications from persons actually in the States named in (b) at the time of filing application.

The United States Civil Service Commission announces open competitive examinations for the positions named above to be held at any of the places listed hereon. Vacancies in these positions in the field, and vacancies in positions requiring similar qualifications will be filled from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. The salaries named above are subject to a deduction of 3½ percent toward a retirement annuity.

A further deduction, not to exceed \$300 a year, will be made for quarters, subsistence, and laundry when furnished by the Government.

Employment lists.—Permanent employes in the classified service will, upon earning a passing mark in these examinations, have their names placed upon a separate list of eligible Government employes, which list may be certified separately to fill appropriate vacancies in accordance with the civil-service rules.

Duties—*Medical Guard-Attendant*.—Under immediate supervision, to perform tasks concerned with the care, treatment, and custody of Federal prisoners including those who are mentally irresponsible or addicted to the use of habit-forming drugs.

Medical Technical Assistant.—To perform duties of medical guard-attendant, and in addition perform, under immediate supervision, duties involving a practical working knowledge of at least one of the above named optional branches.

Basis of ratings.—Competitors will be rated on the subjects listed below, which will have the relative weights indicated. In Subject 2, competitors will be rated on the extent of their education, and on the extent and quality of their experience relevant to the duties of the position applied for, and on their fitness, such ratings being based upon competitors' sworn statements in their applications and upon corroborative evidence.

Subjects

Weights

1. Practical questions in nursing (written)..... 50
2. Education, experience, and fitness..... 50

Total100

Time required.—About 3½ hours be required for the examination in Subject 1.

Ratings required.—In Subject 1, nonpreference competitors must attain a rating of at least 70, competitors granted military preference a rating of at least 65, excluding preference credit, and competitors granted disability preference a rating of at least 60, excluding preference credit; otherwise the remaining subject will not be rated. In addition, all competitors must attain in the whole examination an average percentage of at least 70, including preference credit, if any.

Statements concerning qualifications will be verified by the Commission; exaggeration or misstatement will be cause for disqualification.

Application forms.—The necessary forms may be obtained from the Secretary, Board of United States Civil Service Examiners at any first-class post office (including the places listed hereon), from the United States Civil Service Commission, Washington, D. C., or from the United States Civil Service district office, at any of the cities given below (the title of the examination desired should be stated):

Atlanta, Ga., New Post Office Building.
 Boston, Mass., Post Office and Courthouse Building.
 Chicago, Ill., New Post Office Building.
 Cincinnati, Ohio, U. S. Post Office and Courthouse.
 Denver, Colo., Post Office Building.
 New Orleans, La., Customhouse.
 New York, N. Y., Federal Building, Christopher Street.
 Philadelphia, Pa., Tenth Floor, Gimbel Building.
 Seattle, Wash., Federal Office Building.
 St. Louis, Mo., New Federal Building.
 St. Paul, Minn., U. S. Post Office and Customhouse.
 San Francisco, Calif., Federal Office Building.
 Honolulu, T. H., Federal Building.
 Balboa Heights, Canal Zone, Secretary, Board of United States Civil Service Examiners.
 San Juan, P. R., Chairman, Puerto Rican Civil Service Commission.

The exact title of the examination desired, as given at the head of this announcement, should be stated in the application form.

EQUAL STANDARDS FOR ALL

The influx of foreign physicians into this country, and particularly into this state, lends special importance to recent decisions of the appellate division of the New York Supreme Court. In one case, Doctor G. E. De Luca, an Italian physician, had requested the New York Board of Regents to indorse his Italian license. This the Regents refused to do without examination on the grounds that there is considerable uncertainty as to the standards of many European colleges today. Dr. De Luca appealed from their decision. Another ruling concerned two physicians who demanded indorsement of their German licenses after failing in the New York

State Board Examination. In both cases the Court held that the Regents are within their rights in requiring foreign applicants to take the regular State Board Examination in order to obtain a license to practice here.

The decay of educational standards in certain European countries today is undeniable. New York State requires its own citizens to undergo an exacting training to practice medicine. It cannot be expected to license foreign graduates without first making sure of their qualifications.

As the opinion written by Justice Heffernan sets forth, "The State has the right to demand that those who seek to practice medicine and surgery . . . shall pass a satisfactory examination as evidence of skill and competency. Such a requirement is neither unreasonable or discriminatory."

MICHAEL M. DAVIS AND THE COMMITTEE OF PHYSICIANS

In the current issue of *Survey*—the midmonthly for September, 1939—appears an article entitled "Senators, Doctors and National Health," by Michael M. Davis, chairman of the Committee on Research in Medical Economics, Inc. The Committee on Research in Medical Economics, Inc., readers will remember, is conducted with a matter of \$135,000 donated by the Rosenwald Foundation as its final contribution in the medical economics field. Mr. Michael M. Davis is, for five years, to undertake studies in the field of medical economics, where his interests and his invitations lead him. His article, which occupies one page of the *Survey*, is apparently a review of the preliminary report of the subcommittee of the Senate Committee on Education and Labor. Mr. Davis presumably speaks strongly for the so-called Committee of Physicians and bitterly if not sneeringly about the American Medical Association. He urges popular groups to realize that the physicians of this committee will work with them toward a common goal. The Committee of Physicians has not made public for some time any information concerning its official personnel, its financial status, the methods by which its conclusions are reached or the extent to which the original signers, that is the 430, or the subsequent signers, participate either in drawing up or approving its conclusions. Such information would undoubtedly be of value to the medical profession in its evaluation of the significance of the actions taken and the propaganda circulated by this body. By most physicians the testimonial of Mr. Michael M. Davis will not be considered an endorsement.—J.A.M.A.

CLINICAL SECTION OF THE CHICAGO HEART ASSOCIATION

The Clinical Section of the Chicago Heart Association will have its first meeting at Michael Reese Hospital at 9:00 A. M. on Friday, October 27, 1939. The group of clinicians and investigators on the staff of the hospital will present some of their recent clinical and experimental work. Dr. Soma Weiss, the Professor of Medicine at Harvard, who is to address the

Chicago Society of Internal Medicine and the Institute of Medicine that evening, has agreed to be present and take part in the discussion.

Subsequent meetings of the Clinical Section of the Heart Association will be held each month at one of the heart clinics of the city that all may learn of the work being done in Chicago. The day and time of the meetings will vary to enable the host clinic to entertain us at the time at which they regularly assemble.

Those who are interested in receiving notices of meetings, communicate with Clayton J. Lundy, Secretary of the Clinical Section, Chicago Heart Association, 203 N. Wabash Avenue, Chicago.

The program for the October 27 meeting is as follows:

The first meeting will be held at the Rothschild Auditorium, Friday, October 27, 1939, from 9:00 A. M. to 12:00 Noon.

PROGRAM

- I—Opening Remarks—Dr. N. S. Davis, III.
- II—The Heart in Pregnancy—Dr. Phil Daly (10 min.).
Comments—Dr. Edwin DeCosta (5 min.).
- III—Recent Concepts in Arteriosclerotic Heart Disease.
Case Presentations
 - a. Heart Block and Syncope—Dr. Sylvan Robertson (10 min.).
Discussion—Dr. Soma Weiss (10 min.).
 - b. Cardiac Aneurysm—Dr. William Brams (10 min.).
 - c. Experimental Observations on Coronary Sclerosis and Cardiac Hypertrophy—Dr. Alexander Sanders (10 min.).

Intermission

- IV—Deficiency States and Their Relationship to Heart Disease
Case Presentation—Dr. I. I. Ritter (10 min.).
Discussion—Dr. Soma Weiss (10 min.).
Recent Pharmacological Observations on Circulation
Prostigmin in Peripheral Vascular Disease
—Dr. Samuel Perlow (10 min.).
Mechanism of the action of Digitalis in Heart Failure—Dr. Louis Katz (10 min.).
Discussion—Dr. Soma Weiss (5 min.).

Intermission

- VI—Healing in Subacute Bacterial Endocarditis
Presentation of a Case—Dr. W. C. Buchbinder (10 min.).
Discussion—Dr. Philip Rosenblum (5 min.).

Intermission

- VII—Clinical Pathological Conference (40 min.).
Presentation of Case—Dr. Sidney Strauss (5 min.).
Analysis of Case—Dr. Soma Weiss (10 min.).
Presentation of Pathological Material—Dr. Otto Saphir (15 min.).
Discussion (10 min.).

At the close of each section a short time will be allowed for comments.

Organization Committee

N. S. Davis, III, Acting Chairman

W. A. Brams

G. K. Fenn

Clayton J. Lundy, Acting Secretary.

EXAMINATIONS—AMERICAN BOARD OF
OBSTETRICS AND GYNECOLOGY

The written examination and review of case histories (Part I) for Group B candidates will be held in the various cities of the United States and Canada on Saturday, January 6, 1940, at 2:00 P. M. Formal notice of the place of examination will be sent each candidate several weeks in advance of the examination date. No candidate will be admitted to examination whose examination fee has not been paid at the Secretary's Office. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held in June, 1940.

Candidates for reexamination in Part I (written paper and submission of case histories) must request such reexamination by writing the Secretary's Office not later than November 15, 1939. Candidates who are required to take reexaminations must do so before the expiration of three years from the date of their original examination.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 8, 9, 10 and 11, 1940, immediately prior to the annual meeting of the American Medical Association in New York City.

Application for admission to Group A, Part II examinations must be on file in the Secretary's Office not later than March 15, 1940.

After January 1, 1942, there will be only one classification of candidates, and all will be required to take the Part I and Part II examinations.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

Yours very truly,

Paul Titus, Secretary.

FIRST ANNUAL SYMPOSIUM FOR
INDUSTRIAL NURSES

presented by

DEPARTMENT OF PUBLIC HEALTH,
STATE OF ILLINOIS

A. C. Baxter, M. D., Director

Division of Industrial Hygiene

and

Division of Child Hygiene and Public Health Nursing

DATES: October 26, 27, 28, 1939.

PLACE: UNIVERSITY OF ILLINOIS MEDICAL SCHOOL, 1853 WEST POLK STREET,
CHICAGO

COLLABORATING ORGANIZATIONS

Chicago Industrial Nurses Association

Greater Chicago Safety Council

Illinois Manufacturers' Association

American Industrial Hygiene Association

American Medical Association

University of Illinois Medical School

PROGRAM

Thursday, October 26, 1939

1:00 P. M. Registration—(No Registration Fee)—University of Illinois, College of Medicine, 1853 West Polk Street, Chicago.
Presiding—Dr. C. C. Applewhite, Regional Consultant U. S. Public Health Service, Chicago.

2:00 P. M. Address of Welcome—Dr. D. J. Davis, Dean, College of Medicine, University of Illinois.

2:10 P. M. "Modern Trends in Industrial Nursing Services"—Miss Johanna Johnson, R. N., Supervisor, Nursing Service, Employers' Mutuals Insurance Co., Wausau, Wis.

2:45 P. M. "As the State Department of Public Health Views the Industrial Nurse"—Miss Maude B. Carson, R. N., Chief Supervising Nurse, Illinois State Department of Public Health, Springfield.

3:15 P. M. "The Role of the University in the Preparation of the Industrial Nurse"—(Speaker to be announced).

3:45 P. M. "The Viewpoint of the American Medical Association"—Dr. Carl M. Peterson, Secretary, Council on Industrial Health, American Medical Association, Chicago.

4:15 P. M. Discussion—30 minutes.

Friday, October 27, 1939

10:00 A. M. Plant Visits—(3 groups, number limited).

Crane Company, 4200 South Kedzie Avenue, Chicago.

Western Electric Company, Cicero and 22nd Street Chicago.

International Harvester Company, 26th and Blue Island Avenue, Chicago.

Afternoon Session

Presiding—Mr. Warren A. Cook, President-elect, American Industrial Hygiene Association.

2:00 P. M. "What the Nurse Should Know About the Compensation Law"—Hon. Peter J. Angsten, Chairman, Industrial Commission of Illinois.

2:30 P. M. "New Developments in the State Department of Public Health Through the Social Security Act"—Dr. Grace Wightman, Chief, Division of Child Hygiene and Public Health Nursing, Illinois State Department of Public Health, Springfield.

- 3:00 P. M. "The Value of Records in Industry"—Dr. M. H. Kronenberg, Chief, Division of Industrial Hygiene, Illinois State Department of Public Health, Chicago.
- 3:30 P. M. "Social Service Agencies and the Industrial Nurse"—*Chicago Area*—Mr. Alexander Ropchan, Secretary, Health Division, Council of Social Agencies, Chicago.
- 4:00 P. M. *Downstate Area*—Miss Ruth Bartlett, Illinois State Department of Public Welfare, Springfield.
- 4:30 P. M. Discussion—30 minutes.

Evening Session

- 6:30 P. M. Dinner Meeting—Chicago Womens Club, 72 East 11th Street.
- Presiding—Dr. Albert C. Baxter, Director, Illinois State Department of Public Health, Springfield.
- "The Medical Director Evaluates the Nurse in Industry"—Dr. Joseph H. Chivers, Medical Director, Crane Company, Chicago.
- "The Nurse's Value to Industry from the Employer's Viewpoint"—Mr. Harry Guilbert, Director, Safety and Compensation, The Pullman Company, Chicago.
- "Opportunities for Health Education in Industry"—Mr. B. K. Richardson, Chief, Division of Public Health Instruction, Illinois State Department of Public Health, Springfield.

Saturday, October 28, 1939

- Presiding—Dr. Lloyd Arnold, Professor, Department of Bacteriology and Public Health, University of Illinois, College of Medicine.
- 9:00 A. M. "The Industrial Nurse as a Teacher of Nutrition"—Miss Leone Pazourek, Nutritionist, Illinois State Department of Public Health, Springfield.
- 9:30 A. M. "Personnel Problems and the Industrial Nurse"—(Speaker to be announced).
- 10:00 A. M. "The Communicable Disease Problem in Industry."
- "Pneumonia"—Dr. H. A. Lindberg, Director, Section on Pneumonia Control, Illinois State Department of Public Health, Chicago.
- "Tuberculosis"—Dr. Ellis B. Freilich, Consultant, Chicago.
- "Venereal Disease"—Dr. Albert E. Russell, U. S. Public Health Service, Chicago.
- 11:15 A. M. "Summation"—Mrs. Corrine R. Robinson, R. N., Consulting Nurse, District 1, Illinois State Department of Public Health, Chicago.
- 11:40 A. M. Discussion—20 minutes.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY, 1939-1940 ADVISORY COMMITTEE

- Dr. Charles S. Skaggs, chairman, 513A Missouri Avenue, East St. Louis, Ill.
- Dr. John R. Neal, Abraham Lincoln Hotel, Springfield, Ill.
- Dr. N. S. Davis, III, 700 Michigan Avenue, Chicago, Ill.
- Dr. Harold M. Camp, Monmouth, Ill.
- Dr. Edwin S. Hamilton, 258 E. Court Street, Kankakee, Ill.
- Parliamentarian—Mrs. Lucius Cole, 1117 Lathrop Avenue, River Forest, Ill.

OFFICERS

- President—Mrs. Charles C. Winning, 3000 Audubon Place, East St. Louis, Ill.
- President-Elect—Mrs. H. J. Dooley, 706 Keystone Avenue, River Forest, Ill.
- First Vice-President—Mrs. M. A. Nix, 203 Park Avenue, East, Princeton, Ill.
- Second Vice-President—Mrs. A. F. Gareiss, 2328 W. 107th Place, Chicago, Ill.
- Third Vice-President—Mrs. D. Dickerson, 209 E. Conron, Danville, Ill.
- Corresponding Secretary—Mrs. C. C. Kane, 8521 State Street, East St. Louis, Ill.
- Recording Secretary—Mrs. V. M. Seron, 1806 N. Williams Street, Joliet, Ill.
- Treasurer—Mrs. E. G. Beatty, 621 W. Lincoln Street, Pontiac, Ill.

COUNCILORS

- First District—Mrs. A. E. McCornack, 265 Hamilton Avenue, Elgin, Ill.
- Second District—Mrs. C. R. Bates, Ladd, Ill.
- Third District—Mrs. J. P. Simonds, 25 E. Walton Place, Chicago, Ill.; Mrs. A. H. Brumback, 1503 Jackson Boulevard, Chicago, Ill.; Mrs. W. J. Wanning, 7427 Colfax Avenue, Chicago, Ill.
- Fourth District—Mrs. Kenneth C. Baker, 1225 Cherry Street, Galesburg, Ill.
- Fifth District—Mrs. Harry Otten, 1417 Park Avenue, Springfield, Ill.
- Sixth District—Mrs. Walter Whitaker, Main Street, Quincy, Ill.
- Eighth District—Mrs. A. F. Dietrich, Fithian, Ill.
- Ninth District—Mrs. E. W. Burroughs, Box 114, Ridgway, Ill.
- Tenth District—Mrs. C. C. Kane, 8521 State Street, East St. Louis, Ill.
- Eleventh District—Mrs. Mat Bloomfield, 956 Western Avenue, Joliet, Ill.

CHAIRMEN OF STANDING COMMITTEES

- Organization—Mrs. H. J. Dolley, 706 Keystone Avenue, River Forest, Ill.
- Press and Publicity—Mrs. C. W. Stuart, 330 N. Austin Boulevard, Oak Park, Ill.
- Legislation—Mrs. Harry Otten, 1417 Park Avenue, Springfield, Ill.

Printing—Mrs. William Raim, 178 N. Euclid Avenue, Oak Park, Ill.

Program—Mrs. C. Otis Smith, 1031 Forest Avenue, Oak Park, Ill.

Public Relation—Mrs. Frank Murphy, 2567 E. 72nd Place, Chicago, Ill.

Revisions—Mrs. R. K. Packard, 6901 Paxton Avenue, Chicago, Ill.

Hygeia—Mrs. W. J. Wanninger, 7427 Colfax Avenue, Chicago, Ill.

Finance—Mrs. F. P. Hammond, 6020 Drexel Avenue, Chicago, Ill.

Archives—Mrs. Reid Owen Howser, 304 N. Lombard Avenue, Oak Park, Ill.

Hostess—Mrs. A. H. Brumback, 1503 W. Jackson Boulevard, Chicago, Ill.

Benevolence Fund—Mrs. Hebert B. Henkel, 2135 Wiggins Avenue, Springfield, Ill.

Credentials and Registration—Mrs. M. A. Nix, 203 Park Avenue, East, Princeton, Ill.

Concentration—Mrs. Milo Easton, Chairman, 219 Barker Avenue, Peoria, Ill.; Mrs. John P. Crotty, Co-Chairman, 734 Vogel Place, East St. Louis, Ill.

WOMAN'S AUXILIARY

Dear Auxiliary Members:

Along with the deep sense of appreciation of the honor you have conferred upon me, comes the realization of the serious responsibilities that go hand in hand with the office of State President.

It is with humility and unselfishness, and also an eagerness to maintain the high standards of my predecessors in this office, that I hope to serve you.

No structure can be built from the roof down, but to endure must be painstakingly, and slowly built from the foundation. So has our Auxiliary grown, from cautious, unselfish, and careful planning throughout the years to an Organization that not only serves the Medical Profession, but shines forth as a medium, to help humanity acquire the greatest of all assets—GOOD HEALTH—and a better understanding amongst the laity of what the American Medical Association stands for and its principles.

While other countries are at war, this great Organization, of which we are a part, is valiently striving to uphold the wholesome principles of a nation that has ranked first always for the medical care of its people.

To better serve the Medical Profession, and the laity, it is logical to assume that every Physician's wife must become an Auxiliary member, and every auxiliary member must be an informed, and actively working unit to secure and maintain an effective program. Thus only can we mold public opinion, and disseminate knowledge and truth about medicine, and medical practice to uninformed groups, who are laboring under ignorant and political influence.

In our efforts to educate the laymen to interpret sound medical facts, our outstanding aid is Hygeia, American Medical Association's only publication, which serves as a medium between the doctor and the layman.

I am appealing to every auxiliary member to sub-

scribe to Hygeia, and also to make Illinois the leading state for Hygeia subscriptions this year.

To our Public Relations Committees, which in my opinion holds the progress, and furtherance of the public's education in their hands, I beg to remind you that you must at all times work under the direction and supervision of your County Advisory Committee, and to use only the suggestions and material that will come to you from your State Chairman of Public Relations, Mrs. Frank Murphy. Let each public relations committee adopt the slogan—"We must be tactful," as much harm can come from tactless procedure with the public.

It is my sincere desire that I may have the privilege of a personal contact with each county auxiliary at some time during the coming year, as it is through closer relationships that we accomplish the most good.

May your confidence in me, and my faith in you, make the coming year an outstanding one, that will be characterized by service and progress.

Mrs. Charles Crain Winning,
President, Woman's Auxiliary to the Illinois
State Medical Society.

INTERNATIONAL ASSEMBLY

INTER-STATE POSTGRADUATE MEDICAL ASSOCIATION OF
NORTH AMERICA

This year's International Assembly of the Inter-State Post-Graduate Medical Association of North America will be held in the Palmer House, Chicago, October 30, 31, November 1, 2 and 3.

The Chicago Medical Society will be host to the Assembly and has arranged an excellent list of committees which will function throughout the Assembly.

The officers of the Association and those of the Chicago Medical Society and the State Medical Society of Illinois extend a very cordial invitation to all members of the profession in good standing to attend the Assembly.

The high standing of the medical profession of Chicago, combined with the unusual clinical facilities of its great hospitals and excellent hotel accommodations, make this city an ideal place in which to hold the Assembly.

A full program of scientific and clinical sessions will take place every day and evening of the Assembly, starting each morning at 8:00 o'clock.

In the neighborhood of eighty distinguished teachers and clinicians from different parts of the United States and Canada are honoring the Assembly by contributing to the program. The speakers and subjects have been carefully selected by the program committee so as to give the members of the medical profession in attendance an intensive week of the highest type of postgraduate medical study.

Pre-assembly and post-assembly clinics will be conducted free of charge in the Chicago hospitals the Saturdays previous and following the Assembly; that is, October 28 and November 4. All members of the profession are cordially invited to attend these clinics. Advanced information regarding the attendance at these clinics is greatly desired by the Committee on Ar-

rangements; therefore, if you expect to attend, it will be deeply appreciated if you will so inform the Managing Director as early as possible. If you have preference for any particular Chicago clinician or hospital, please so state.

Programs for the pre-assembly clinics may be obtained at the desk in the Palmer House any time during Friday, October 27, and Saturday morning, October 28, and those for the post-assembly clinics may be secured at the registration desk of the Assembly at the Palmer House, Friday, November 3.

Excellent scientific and commercial exhibits of great interest to the medical profession will be an important part of the Assembly. These exhibits will be open to members of the medical profession in good standing without paying the registration fee.

The registration fee for the scientific and clinical sessions will be \$5.00.

The members of the profession are urged to bring their ladies with them, as a very excellent program is being arranged for their benefit by the Ladies' Committee. Chicago has many places of interest which will make this year's program especially attractive to them.

Members of the profession who can possibly arrange to attend the Assembly cannot afford to miss it.

If you have not received a program or desire special information regarding the Assembly, please write to the Managing Directors' office, Freeport, Illinois.

Dr. George W. Crile, President and Chairman of Program Committee, Cleveland, Ohio.

Dr. Chevalier Jackson, President-Elect, Philadelphia, Pa.

Dr. William B. Peck, Managing Director, Freeport, Illinois.

Dr. James H. Hutton, President, Illinois State Medical Society, Chicago, Illinois.

Dr. Nathan S. Davis, III, President, Chicago Medical Society, Chicago, Illinois.

Dr. Frank F. Maple, President-Elect, Illinois State Medical Society, Chicago, Illinois.

Dr. H. Prather Saunders, Secretary, Chicago Medical Society, Chicago, Illinois.

Dr. Robert H. Hayes, General Chairman, Chicago Committees, Chicago, Illinois.

SHIPMENT OF GOVERNMENT-OWNED RADIUM

Announcement of the first shipment of Government-owned radium which is being loaned to various hospitals has been made by the National Cancer Institute of the United States Public Health Service.

Shipments were made of 250 milligrams to the Medical College of Virginia at Richmond, of 200 milligrams to the Albany Medical College at Albany, New York, and of 50 milligrams to the Misericordia Hospital, Philadelphia, Pennsylvania. Other shipments are planned for the near future.

The radium was prepared for shipment by the Bureau of Standards by being placed in special lead containers sufficiently thick to prevent dangerous and destructive radio emanations.

In announcing the first shipment of radium, the Surgeon General of the Public Health Service stated that the entire supply of radium owned by the National Cancer Institute (9½ grams, valued at \$200,000) has now been allotted and no more applications can be accepted until additional radium is made available to the Cancer Institute. Eight grams are being loaned to hospitals which are properly equipped to treat cancer patients. The remaining 1½ grams will be used by the Cancer Institute for Research and for the treatment at the cancer clinic of the Baltimore Marine Hospital of Service beneficiaries who are victims of the disease.

WILLIAM TAYLOR REPLACES JOSEPHINE ROCHE

Miss Josephine Roche, well known by reputation to all of us, first gained national notoriety when she set out to create a new era in industrial relations in Colorado by reforming the policies of the Rocky Mountain Fuel Company, of which she became president and general manager. According to her own admission, that company has now developed an acute and precarious financial condition. To save it from bankruptcy, Miss Roche has been ousted from control. Mr. Taylor, a successful business man, has been called in to attempt a reorganization.—Bulletin Fulton County Medical Society.

MALFORMED BABIES LIKELY TO REPEAT (Copyright, 1939, by Science Service)

Edinburgh.—The mother of a congenitally malformed child is approximately 25 times more likely to have another malformed offspring than is the average mother in the general population, Dr. Douglas P. Murphy of the University of Pennsylvania's School of Medicine told the Seventh International Congress of Genetics here.

As the result of an extensive investigation of nearly 1,500 cases of congenital defects and over 500 successful interviews of mothers in such cases, Dr. Murphy was able to show that there is real danger of malformed children if defective offspring have already been born to the parents.

One reason the investigation was undertaken by Dr. Murphy and his medical students was that a colleague, asked by parents of a "monster" baby whether subsequent offspring were likely to be malformed, answered "no" according to the best knowledge available, and yet the next offspring turned out to be a monster.

Dr. Murphy found that parents of malformed children suffer from varying degrees of reproductive inefficiency, of which the birth of a malformed child is only one expression. There is a long period of relative sterility which precedes the birth of the malformed member of the family. Fifth and subsequent children are more likely to be malformed than the first four children, the chances increasing with the number of children, Dr. Murphy found.

EVERYTHING IS GETTING TOO DAMN CONVENIENT!

About the time Roosevelt started his "alphabet soup" cure all for our economic troubles, the pharmaceutical manufacturers started their alphabet Vitamin business. The ordinary physician has to go to the grade school to learn his A B Cs. Howinell did you all survive before we learned about these unseen vitamins? The obstetricians will soon be delivering the new born in cellophane. These mothers have their babies whether they like it or not. All this hospital business seems unnecessary to those of us who were "brought in the world" by the well known midwife. DeLee states that there is a higher mortality rate on the hospital born than on the house born infants, both in maternal and baby welfare figures. Better get back to the old time common sense of treating a patient and not a lot of symptoms. There is so much "scientific work" done on a patient that he becomes moribund before the interne is satisfied with the attending physician's chart record. Maternal welfare clubs must be O.K. However, the mothers of those belonging to maternal welfare clubs seemed to prosper. We might better start "A Physicians' Welfare Club." It seems as if we are anxious to look after everybody but ourselves. If this Socialized Medicine goes through we should join the C. I. O. and get the recognition that a plumber gets. We need a few "strong arm" men to further our interests. Instead of a medical society, we need a union. Stop this drug store counter prescribing and treatment, stop this barber shop advice. The doctors have always "given everything away." Let's organize a union.—St. Clair County Medical Bulletin.

THE BUSINESS MAN'S PRAYER

Oh Lord, I acknowledge Thy existence and the existence of a lot of other things, less godly, which I can overcome only with Thy help and the help of my own backbone. I fully realize that on all hands are invisible forces, which seek my destruction, and that, if I am to come through unscathed, I must fight every inch of the way.

Give me strength to lightly bear my burden of living, and to smile till my burden becomes a joy, for verily this is the secret of all earthly gladness.

Teach me that sixty minutes make one hour, sixteen ounces one pound, and one hundred cents one dollar.

Help me to live so that I can lie down at night with a clear conscience, without a gun under my pillow, and unhaunted by the faces of those to whom I have brought pain.

Grant, I beseech Thee, that I may earn my meal ticket on the square, and in the doing thereof that I may not stick the gaff where it does not belong.

Deafen me to the jingle of tainted money and the rustle of unholy skirts.

Blind me to the faults of the other fellow, but reveal to me mine own.

Guide me so that each night when I look across the dinner table at the wife, who has been to me a blessing, I will have nothing to conceal.

Keep me young enough to laugh with my children and to lose myself in their play.

And then when there comes the smell of flowers, the tread of soft steps, and the crunching of the hearse's wheels in the gravel out in front of my place, make the ceremony short and the epitaph simple—"Here Lies a Man."—*Homer McKee.*

EARLY MEDICAL SCHOOLS: DOCTOR SIGNERS

The Medical College of Philadelphia, today a part of the University of Pennsylvania, was formed in 1765; the King's College Medical Department, today's Columbia, was founded in 1768; and Harvard had its first medical school in 1782. In 1768, the first medical degree, that of a B.M., was given to ten medical students at Philadelphia Medical College; the first M.D. was given to two students at King's College in 1770.

The first public hospital was opened in Philadelphia in 1752. New York Hospital was ready for occupancy in 1776. The first medical societies were formed: State Medical Society of New Jersey in 1766, and Delaware State Medical Society in 1776.

Five doctors signed the Declaration of Independence: Joshua Bartlett and Matthew Thornton from New Hampshire, Oliver Wolcott from Connecticut, Lyman Hall from Georgia, and Benjamin Rush from Pennsylvania.—(*Pharmaceutical Advance.*)

SLEEPING SICKNESS VACCINE IS READY

New York.—A vaccine is now ready to protect humans against horse "sleeping sickness" if there is an outbreak this summer as there was last year. Development of the vaccine is announced to fellow scientists by Dr. Ralph W. G. Wyckoff, of the Lederle Laboratories at Pearl River, N. Y., in *Science* here.

Vaccines that protect horses against both eastern and western types of this serious plague have previously been developed, but medical and health authorities did not consider these suitable for human use. Dr. Wyckoff's vaccine has been prepared in a somewhat different way from that used for making horse vaccines. It has been effective in protecting laboratory animals and should, Dr. Wyckoff says, "be more suitable for any human use that may in the future be needed."

SPEAKING OF BIRTH CONTROL

A spinster social worker called on a negress who had a family of eleven or twelve children and was expecting another. Of course she had a very difficult time feeding and clothing her brood and the social worker was moved to say,

"Mandy, what you need is birth control."

"Oh, no, Miss Smith," Mandy replied, "that's all right for you but I'se married."

Original Articles

CARCINOMA OF THE LARYNX

L. BENNO BERNHEIMER, M. D.
CHICAGO

During the past three decades important advances have been made in the surgical treatment of laryngeal carcinoma. Methods of direct and indirect inspection of the larynx have been developed to a point that even direct laryngoscopy with biopsy is now often considered an ordinary office procedure. Surgical technics for the removal of laryngeal neoplasm have been standardized and perfected. Intrinsic malignant lesions of the larynx, operable by fissure and cordectomy, result in at least 80 per cent. of five-year cures, and 60 per cent. of those patients with intrinsic lesions requiring total laryngectomy are alive without recurrence after five years. Laryngectomized patients may even be offered a satisfactory conversational voice through the development of the artificial voice box. However, laryngeal surgery is still major surgery, leaving the patient with a crippled though satisfactory voice and often with a permanent tracheotomy tube. It is well, then, for the laryngologist to consider recent advances made in radiologic treatment of this disease entity and it is the primary purpose of this communication to discuss them.

The radiologic technic for the treatment of epidermoid carcinoma of the larynx has undergone great advancement, but it is likely that through a more intimate and less controversial relationship between radiologist and surgeon, greater strides toward the perfection of the treatment of this entity will be made. At the Hines Veterans Hospital, where last year 191 epidermoid malignancies of the mouth, pharynx and larynx were admitted, 49 of which involved the larynx, a study of these cases was made under such a relationship. Every new case was examined by Dr. Cutler, consulting radiologist, and myself as consulting surgeon, before any treatment was undertaken. Also Dr. Henri Coutard has kindly given us the benefit of his advice. In arriving at a diagnosis the usual orthodox procedures, such as careful history, serology, chest examinations, direct inspection of the larynx and biopsy were carried out. In

addition an x-ray picture was taken of each suspected larynx, these soft tissue pictures often being invaluable in aiding diagnosis; the usual view was a lateral one.

Aided by these studies indications for the type of treatment of a given laryngeal carcinoma have evolved themselves and at present we are guided as follows:

1. Intrinsic epidermoid carcinoma of the larynx with movable vocal cords is considered non-infiltrating and usually is treated with external irradiation. These lesions are most frequently found to be undifferentiated ones, but with early lesions the motility of the cord has proven to be a more reliable indication for treatment than the cellular structure of the neoplasm. The clinical aspects of the neoplasm have proven throughout to be the important determining factor for radiation, rather than the microscopic picture, so that we have paid but little attention to the laboratory grading of a given lesion and have disregarded other orthodox conceptions of radio resistance based upon the mere cellular structure of a given neoplasm. The clinician, not the pathologist, must make the decision between radio therapy and surgery.

2. Intrinsic epidermoid carcinoma of the larynx with a fixed cord is considered infiltrating and is usually treated surgically. These infiltrating lesions are usually differentiated ones, but again the motility of the cord has proven to be a much more satisfactory guide than the histopathologic picture. However, in the presence of undifferentiated lesions with cordal fixation, a therapeutic test may be made before decision upon the method of treatment to be employed. This test consists of a study of the effect of 2,000 R units on the motility of the cord. If after this inadequate exposure the cord becomes freely movable, an adequate course of radiation may be considered.

3. Primary subglottic lesions are usually treated surgically. Here the anatomic location of the lesions seems to exert an influence on the response of the tumor to radiation.

4. Extrinsic lesions, either primary or due to extension of intrinsic disease, are irradiated. However, surgery is not infrequently combined with radiation in treating some of these extrinsic lesions. Block neck dissection for cervical metastasis may be indicated after the primary lesion has been controlled by radiation, or laryngec-

tomy following the regression of an extrinsic lesion down to the original intrinsic focus may at times be advisable.

5. Intercurrent upper respiratory infections during radiation treatment of laryngeal carcinoma modify the cellular response to radiation in a most unfavorable manner. This is evidenced by pain, malaise, edema of the mucosa of the larynx, and inflammatory changes in the skin over the irradiated area. In the presence of this complication radiation must be terminated and proper surgical measures undertaken. There are, however, many problems as yet unsolved concerning the combination of radiotherapy and surgery. It is a recognized fact that previously irradiated tissue not alone adds to the difficulty of surgery because of the formation of scar tissue, and the tendency to increased bleeding, but that it also results in a crippling of the cellular response to healing. We are attempting at the present time to establish an optimum time for surgery following an adequate course of radiation and are also attempting to establish the maximum amount of radiation that may be given without adversely affecting subsequent surgical procedure.

The technic for irradiation which is employed is that of the fractional method as described by Coutard. The factors involved are 200 kilovolts, 1 mm. copper screening, 60 cm. distance. 150 R units are usually given daily through either one or two portals. These portals are usually 6x6 cm. at the beginning but are progressively decreased as the treatment progresses, down to a portal of around 3x4 cm. A total dosage of between 5,000 and 7,000 R units is usually given. This technic, however, is not a fixed one, the factors being modified by estimation of the cellular response and by considerations of the original lesion.

In conclusion: Considering our present knowledge concerning epidermoid carcinoma of the larynx, two observations may be made: 1. There is need for close unbiased cooperation between surgeon and radiologist. 2. The indications for surgical treatment of a given malignant lesion of the larynx cannot be based solely upon such considerations as accessibility, mobility, and radiosensitivity as indicated by some laboratory method of grading. In making a decision the surgeon must be aware of the importance of the reaction of underlying connective tissue; he must be able to interpret clinical evidence of infiltra-

tion; he must be able to interpret clinically cellular response to irradiation; and, most important, he must make his decisions without bias.

DISCUSSION

Dr. Max Cutler, Chicago: I appreciate the opportunity of discussing Dr. Bernheimer's presentation. I agree with him completely upon the importance of an intimate and friendly collaboration between the surgeon and radiologist in the diagnosis and treatment of laryngeal cancer.

The question of surgery and radiation in the treatment of carcinoma of the larynx may be divided into the following three parts:

1. Extrinsic carcinomas of the larynx which are usually highly undifferentiated and as a rule radiosensitive. These tumors are admittedly inoperable both technically and biologically, and hence they are outside the domain of surgery.

2. Small carcinomas limited to the true vocal cord, which are technically operable. If the lesion is limited to the middle third of the cord and has not reached the anterior commissure, surgical removal gives excellent results and is the method of choice. Local excision of the lesion yields approximately 80 per cent. cures in this group of cases. It is probable that the 20 per cent. failures in this group which is technically operable is due to the fact that there exists approximately 20 per cent. of highly undifferentiated carcinomas in this region. In this small group of cases the lesion, although technically operable, is biologically inoperable. These lesions are composed of undifferentiated cells which have extended along the lymphatics anteriorly to the commissure or posteriorly to the arytenoid. This microscopic extension of disease cannot be detected clinically. Surgical removal of these lesions is commonly followed by local recurrence, and the surgeon is surprised to find a local recurrence resulting from the removal of a lesion which seemed so highly favorable and so strictly operable. This group is radiosensitive and responds well to radiation therapy. It would be interesting if the surgical statistics segregated this group of cases and an attempt were made to determine whether the failures may not be contributed to this important factor.

3. There exists an important intermediary group in which a decision between surgery and radiation is exceedingly difficult. This difficulty may be due to the fact that the lesion is of borderline operability, or to the patient's age or his general condition. In this group the individual factors in each case must be carefully considered. These factors are histological and clinical. Histologically, if the tumor is highly undifferentiated, it is generally radiosensitive. If the tumor is of an adult squamous type, it is generally radioresistant. A more accurate guide to radiosensitivity, however, than the histological structure, is the fixation or mobility of the vocal cord. The highly differentiated tumors are usually movable even when they are extensive. The differentiated forms are usually fixed. When a discrepancy exists between the his-

tological structure and the mobility of the parts, the latter is the more reliable sign.

It is important to recognize that fixation may not be due to neoplasia but to inflammation. A moderate amount of radiation invariably results in a reestablishment of mobility when the fixation is due to an inflammatory process. This response may serve as an accurate and important guide in deciding between surgery and radiation in borderline cases.

The decision between surgery and radiation in a given case of laryngeal cancer is a most delicate and sometimes difficult task. The responsibility of this decision can hardly be exaggerated. Our increased clinical, pathological, and radiological experience during the last five years permits us today to make a more intelligent selection in the difficult and borderline cases.

Dr. Glenn Greenwood, Evanston: Successful management of cancer of the larynx today calls for close cooperation on the part of the laryngologist, pathologist and often the roentgenologist.

The laryngologist shoulders the responsibility of accurate clinical diagnosis. He should determine the intrinsic or extrinsic character of the lesion. If intrinsic, whether it be in the middle, anterior or posterior third of the cord; whether the anterior commissure or arytenoid area is involved; and whether the cord is mobile, partly mobile or immobile. Adequate biopsy material rests with him. Too often too little tissue is obtained and too often it is taken where most easily accessible. Superficial specimens may be papillary in character, whereas the base may be differentiated.

No laryngeal new growth should be treated in any manner until biopsy evaluation occurs. Two of my cases were previously rayed without biopsy specimens. I believe multiple specimens of tissue should be obtained and always an effort made to secure pieces of tissue incorporating some seemingly normal tissue along with the abnormal. This gives the pathologist a "break," which he needs, for he must tell us the amount of differentiation present, he must grade the lesion and thus inform us as to the radiosensitivity or radio resistance of the new growth.

The roentgenologist with this clinico-histological information at hand should tell us, in the light of present day knowledge, what assistance we may expect from ray therapy.

The question then arises as to the preferable type of therapy. For the most part laryngologists feel that surgery in the well differentiated group is preferable, it being not contraindicated. Laryngofissure in intrinsic new growths in Jackson's hands has effected an 82 per cent. cure—serviceable voice follows. Referring to ray therapy, the eminent investigator Coutard classifies intrinsic growths anatomically into:

- a. Median, which, he states, are easily curable by irradiation even though they are of cutaneous type.
- b. Anterior: almost all are incurable by irradiation except where the histological form is undifferentiated.

c. Posterior: rarely cured by irradiation.

A series of fourteen cases, two intrinsic, and twelve extrinsic seen in private practice and at Northwestern University clinics show five-year cures in the two intrinsic causes—one operated by laryngofissure—alive and well; the other irradiated, who has since died from causes other than cancer. Of the extrinsic cases, two were irradiated, ten were operated upon; none survived the five-year period.

I have here a recent requested communication from Doctor Clerf, which I believe is both interesting and instructive. He states:

"While I have made no attempt to evaluate the benefits from irradiation and to compare them with the results secured by surgical treatment in cases of cancer of the larynx, it is my opinion that surgical treatment gives infinitely better results in those cases that were operable. Unless there is some definite contraindication in a vocal cord cancer I believe that surgical treatment should be employed. The same can be said of epiglottic lesions. There may be some question regarding a poorly differentiated carcinoma originating on a ventricular band or arytenoid. According to the radiologist this type of case should respond best to irradiation. Notwithstanding this, however, I have secured some very excellent results by surgical means.

"Briefly summarizing, I believe that surgical treatment still occupies first place in carcinoma of the larynx. In extensive cases it probably is desirable to follow surgical extirpation by a course of irradiation therapy. A few unfavorable experiences have convinced me that preoperative irradiation is not desirable."

Dr. Thomas C. Galloway, Evanston: I think Dr. Bernheimer's approach to the subject is excellent, and I wish to emphasize the fact that he has tried to put over that the clinician should have control of the case as to the final decision, but that there always must be cooperation between radiologist and clinician. Dr. Bernheimer says that surgery is, after all, a major procedure, implying perhaps that radiology is not. But it is not so simple either. At Cook County Hospital we are the clearing house for malignancies which have failed to respond to treatment and we have seen a good many patients with irradiation necrosis. We have seen at least three patients with carcinoma of the larynx die within six months of having been reported cured.

I think we agree with Dr. Cutler as to laryngofissure, which is after all the treatment of choice for intrinsic new growths; the subglottic tumor is, we believe with Hautant, surgical; carcinoma of the cord is surgical; the ventricular band carcinoma probably responds best to radiology; and the tumor which is higher probably will not respond to anything.

I think Dr. Bernheimer is to be congratulated on the presentation. We shall probably be convinced by an analysis of his five-year cures when he presents them.

Dr. Joseph C. Beck, Chicago: I am sorry I was not in time to hear the whole paper, but I am sure it was good. I am always proud when any of

my boys get up and tell of their experiences. For a man who is in danger of carcinoma of the larynx who has been smoking as much and as long as I have, radiation is a wonderful thing to be thinking of. However, I am still looking for a case in which biopsy proved carcinoma of the larynx and where laryngofissure or laryngectomy was definitely indicated, that was subjected to irradiation instead, at a time when this procedure was a very courageous one to do. If such a case was given to the radiologist I would like to see what he could do with it. Namely, I am still looking for a cure after the use of radium or x-ray, where there was a chance to obtain a cure from operation.

I am sure we all wish this type of treatment would succeed. The Cook County Hospital, which has been and still is a chute for hopeless cases (I had a service there for a number of years and I know)—these are the ones that the radiologist usually gets to treat.

Dr. Bernheimer, who followed me as Consultant at the Hines Veterans Hospital sees the same type of cases there that I have been seeing for the past ten years and we realize that the Veterans are more frequently affected with carcinoma than formerly because they are in the dangerous cancer age. Unfortunately there too, the cases come in very frequently in an advanced stage. Had you gentlemen been at the Legion meeting last night you would be very much disturbed about this subject of carcinoma at the Veterans Hospital.

And now this may be my final word regarding this subject and I would like to say that the radiologist, to differ from the radiologist, should have the opportunity of curing operable cases of carcinoma if possible. Some years ago at the meeting of the American Laryngological Association, Dr. Chamberlain of Cleveland said that a man should be condemned for subjecting a patient to radiation who would be curable by laryngofissure. But how are we to know that radiologic treatment of early carcinoma is curative. That would be the greatest advance made in the science of radiology and radiumology if we could know which cases are adaptable to that form of treatment. However, the technique of laryngofissure we have learned from St. Clair Thompson, and the oldest statistics we have, show that by this treatment we have patients walking around for a good many years following this operation. And I hope those statistics will stand life Gibraltar. We can only hope for radiology. Today we have a radiosensitive pathologist—a man who can differentiate the type of cell he is looking at, and can tell the indications for operation and for treatment.

I am very much interested in this subject and am glad Dr. Bernheimer delivered it so well.

Dr. L. B. Bernheimer, Chicago (closing): I want to thank all the discussers. Dr. Greenwood mentioned giving the pathologist a break. I believe that he has been given too many breaks. The pathologist's opinion is important in arriving at a diagnosis, but heretofore the type of treatment of a given neoplasm has

been left to his judgment. I think that this is a mistake.

Dr. Galloway mentioned that deaths follow irradiation, and I know this to be true. I have seen two from slough. However, a skilled radiologist can avoid these results as they are usually due to improper exposure and insufficient attention to the reaction of skin and mucous membrane.

I want to thank Dr. Beck particularly for discussing my paper. One of the cases he saw at Hines in 1934 involved the pyriform sinuses, the epiglottis, both arytenoids and both ventricular bands. This patient was irradiated, and I saw him four weeks ago, a good five years afterward, with absolutely no signs of recurrence.

AN EFFICIENT ADJUNCT IN THE TREATMENT OF CORNEAL ULCER

WATSON W. GAILEY, M. D.

BLOOMINGTON, ILLINOIS

This paper is intended to describe an adjunct in the treatment of corneal ulcers which I have found to be more than merely satisfactory. It is true that this procedure is not infallible for many patients have been encountered in which it has been used where the condition of the ulcer was not influenced in the least by its administration. On the other hand, in many instances, not only has this treatment yielded considerable satisfaction, but it has been the means of affording the patient a very substantial degree of comfort.

It has been employed in various forms of corneal ulceration and I regret that I am not prepared to make direct comparisons in results of instances where it was used with those in which it was not administered. I am decidedly convinced that not only has the healing of the ulcer, in most instances, been much more rapid, but the patient during the process of treatment has experienced infinitely greater comfort during the course of the disease.

The technic of this procedure was encountered while visiting Dr. Aaron Green's clinic in San Francisco. I am reasonably certain that this treatment was original with Dr. Green. The technic is as follows: One or two drops of one per cent. holocain or two per cent. butyn is dropped into the lower cul de sac every two minutes for four instillations. A punctum dilator is

used in the lower canaliculus. A strong dental syringe fitted with a lacrimal tip filled with pontocain ointment is inserted into this dilated canaliculus and a sufficient amount of ointment is injected into the lacrimal sac until such time as it is seen emerging from the upper canaliculus. In the beginning, I found this to be a rather awkward procedure but after a few administrations it became much less complicated. The reason for this awkwardness was the size of the syringe and the difficulty with which this heavy ointment was forced through a small lacrimal tip.

Originally, plain white vaseline was used but Dr. Joseph Duane suggested the use of pontocain or butyn ointment in its stead contending it would act equally as well as the vaseline in blocking off the lacrimal sac and at the same time would serve as a continuous local anesthetic to an irritated painful area. The pontocain suggestion was adopted as it was felt that its firm consistency would be preferable even though it would prove to be more difficult to inject. In many patients it has been possible to express, by pressure over the site of the sac, some of the pontocain on the third day. In others, pressure over the lacrimal sac after twenty-four hours would produce no visible signs of the presence of ointment. This finding has been used as a guide to know how often the injection should be made. The majority of patients, however, have been treated every other day.

I have no positive explanation as to why this treatment is responsible for more rapid healing, but it is safe to assume that infections in many types of ulcers have their origin in the nasal passages and spread by way of the lacrimal sac. If this be true, one may safely conclude that the source of the infection or reinfection is occluded by the blocking off of secretions from the sac thereby preventing fresh infection from injecting itself into the picture. Lubrication of the ulcer surface and the anesthetic effect of the pontocain are responsible for the comfort which this treatment affords the patient.

The first step in the management of an ulceration of the cornea is to determine, if possible, the etiological factor or factors. It might be well at this point to name a few of the types of ulcers which have been treated by this method.

I. Ulcers following:

- A. Foreign bodies.
- B. Abrasions.

C. Burns.

1. Mechanical
 - a. curling iron
 - b. molten metals
2. Chemical
 - a. acid
 - b. alkali

D. Catarrhal conjunctivitis

E.. Trichiasis

F. Trachoma (which may be ignored since sulphanilamide has been added to our armamentarium).

II. Serpigenous

III. Dendritic

IV. Recurrent marginal ulcers

V. Herpes ophthalmica

Again I'll repeat that my method in the management of corneal ulceration is first to ascertain, if possible, the cause, second, to check the spread of the ulcer both as to depth and area, third to make an attempt to relieve the pain and photophobia which invariably accompanies this disease and lastly, to prevent, if possible, secondary complications.

The various forms of treatment which were employed in these patients are as follows:

1. Atropine.
2. Cauterization with carbolic or trichloroacetic acid.
3. The application of pasteurization by the thermophore or the actual cautery or with quartz light.
4. The application of iodoform, calomel, or zinc sulphate powder.
5. The application of the various aniline dyes.
6. Delimiting keratotomy.
7. Paracentesis.
8. Bandage.

It is not my intention to leave the impression that all of these methods were employed in an individual patient but that one or more of them were employed as deemed advisable.

I am sure that the blocking of the lacrimal sac with pontocain ointment relieves, in a substantial manner, both the photophobia and the pain which attends corneal ulceration—that it hastens healing but that it has no quieting effect on the pain of a secondary iritis. I have not found it necessary to employ any of the commonly used analgesics since the adoption of this treatment. When I feel that the need for surface anesthesia is no longer during convalescence,

I substitute white vaseline for pontocain because of its ease of injection, until the healing is complete. It has been observed that in patients having considerable secretion that the blocking of the sac reduced the secretion to a minimum, thereby removing this contraindication to the application of a patch or sealing of the eye.

In the serpigenous type of ulcer, I am not at all sure that the duration of the disease is in any way shortened by the administration of this treatment, but do feel that my patients have been made much more comfortable.

Among other patients, six recurrent marginal ulcers were treated. These were found to be particularly amenable to this treatment which gave amazing results. One patient who had in the past required from two to three weeks or more to heal recurrent marginal ulcers, required only one injection and healing followed within seventy-two hours.

Incidentally, this treatment has been found to be very effective in patients who have had a deeply embedded foreign body in the cornea. I speak of the type of foreign body which is difficult to remove and in which there is stain or scorching in the bed of the wound and where considerable digging is required in order to remove the offender. This type of injury we all see too often. The possibility of a secondary ulceration is great and there is a still greater possibility of the patient informing you over the phone or in person, in an angry petulant voice, that the eye is still painful, that the piece of steel, he is sure, is still present and "what do you propose to do about it." Blocking the sac with pontocain followed by cotton and gauze dressing sealed in place with Scotch cellulose tape has been the means of eliminating this irritative occurrence from my practice.

This procedure has not been presented as a cure-all but simply as a comforting adjunct devoid of danger and simple of execution in the management of corneal ulceration.

DISCUSSION

Dr. W. R. Fringer, Rockford: Dr. Gailey's paper is interesting and instructive. It is an innovation. Anything that is new in the treatment of eye conditions is worthy of commendation, especially if it has proven beneficial, as this has in the hands of Dr. Gailey. To me it is a new procedure. I am glad to know about it.

In our office we do not see many vicious corneal ulcers. They used to be quite frequent. One reason

why they are less frequent, I think, is because most people have some knowledge of hygiene and endeavor to practice it. Then again, the farmers do not gather in their corn as they used to. When they cut and shocked it by hand, an injury to the eye from a corn blade was not unusual. These injuries usually resulted in a severe and persistent corneal ulcer.

Foreign bodies, usually consisting of steel or emery, cause us more trouble than the laity think they could. I am sure we have all had the experience that Dr. Gailey has had of the patient calling us up, usually at night, and telling us that we did not get all the steel out of his eye. These foreign bodies we dig out, and if there is a rust stain in the cornea, we keep at persistent digging until we get it all out, using fluorescein, if necessary, to be sure. Then homatropin, bichloride ointment and a bandage.

In abrasions of the cornea from fingernails, curling irons and chemicals, clean the eye, use a mydriatic, and bandage, using homatropin or atropin, as indicated. With a very slight abrasion of the cornea, we put on a bandage. Some years ago at the Chicago Ophthalmological Society, the late Dr. George Suker advocated the open treatment of corneal ulcers, that is, dispensing with the bandage. The late Dr. William Wilder took exception, stating that a bandage made the patient more comfortable and promoted healing. I am heartily in accord with the treatment advocated by Dr. Wilder.

In the dendritic ulcer use iodine and a bandage.

The Mooren ulcer is a big question. We all do everything we know, consult the literature, and hope.

Dr. Gailey, in his "Adjunct in the Treatment of Corneal Ulcer," has given us a worthwhile method that is worthy of our appreciation.

Dr. Thomas D. Allen, Chicago: This is a most interesting paper and the subject deserves serious consideration because of its simplicity and because corneal ulcerations are so painful. Ordinarily a bandage and aspirin are sufficient to relieve this pain; but when they are not, some anesthetic ointment can be placed beneath the lids, or as Dr. Gailey suggested, within the lacrimal sac itself.

Some eye physicians do not bandage corneal ulcer patients, and occasionally all of us leave off bandages, as for instance in one-eyed individuals in whom the ulcer occurs in the only good eye. I do not think this is good practice. A patient of one of our prominent physicians lost such an eye not many years ago because he did not bandage it. Still, there are very occasional cases in which it seems to be good practice to omit the bandage.

As a simple adapter I have had the tip of a tube for ophthalmic ointment filed down until a hole is made in its end; then the irrigating nozzle can be placed on it and the salve squeezed into the sac.

I wonder at Dr. Gailey's use of pontocain ointment and holocain or butyn solution; "why not use pontocain solution? You can get the tablets and make up your own one-half per cent. solution very inexpensively. We find pontocain as efficient or more so than holocain and not as painful as butyn.

A suggestion in the way of caution in the use of prolonged anesthesia especially if the eye is left open: an anesthetized cornea will not feel foreign bodies or a scratch as from a handkerchief or the finger nor can it feel drying from exposure to the air. For this reason I infinitely prefer, if at all possible, to bandage all eyes which have been anesthetized.

I do not agree with the essayist that trachomatous ulcers can be ignored now that we have sulfanilamide, although our troubles with this serious condition are much less than they were. Sulfanilamide is not a cure-all; it is a valuable adjunct—a very valuable adjunct. Yesterday at luncheon Dr. Francois, who has the trachoma service at the infirmary, told me about some cases who had been very much relieved on sulfanilamide a few years ago, that showed up with rather serious ulcers. They needed care and cleanliness, operative treatment for the trichiasis, and usually foreign protein. Whether the treatment recommended in this paper is applicable in such cases will depend on the effects of such obvious indicated treatment.

As to a reason for prompter healing I would suggest this: A painful eye is frequently and violently squeezed by the lids; the edges of the lids rub the corneal epithelium, often rubbing away the newly formed epithelial cells before they have become fixed to the basal tissues (Bowman's membrane or the *substantia propria*).

An excellent point in this paper—one which cannot be too frequently emphasized—is the examination which *must* be made of the lacrimal sac before any salve can be placed in it. Too often I find that the sac is ignored, not through ignorance of its importance but because it is forgotten. Of course if the sac is palpably infected it should not be filled with salve just to anesthetize the cornea. It should be removed *in toto* and the canalicula thoroughly opened.

The Winthrop people are considering marketing a new ophthalmic ointment with some antiseptic for just such use. The Lilly company has a combined antiseptic and anesthetic ointment of merthiolate and metycaine which is now available.

Let me congratulate the essayist again on this valuable suggestions.

Dr. George P. Guibor, Chicago: I think this paper is admirable, but I wish to suggest one precaution because of a possible allergic reaction to pontocain. I had one case in which 0.5 per cent. pontocain was instilled in the eyes, and in twelve minutes the bulbar conjunctivae were so edematous that the patient could not close the eyes. With such reaction to a 0.5 per cent. solution I do not know what would happen if one injected it in large quantities, without taking the necessary precautions beforehand to determine a patient's susceptibility to the drug. I am offering this as a suggestion to the author and not as a criticism of his technic.

Dr. W. W. Gailey, Bloomington (closing): First I wish to thank all of the men who discussed my paper. I think I will accept Dr. Guibor's suggestion of making some test to determine whether there is an allergy

for pontocain before instituting treatment. I have never seen an allergic reaction from pontocain, although I have seen a severe reaction to holocain. Not only was there an intense edema, but an entire desquamation of the cornea. In closing I will again repeat that I have found this simple procedure very helpful in the management of corneal ulcers.

GASTRO-INTESTINAL SYMPTOMS OF RESPIRATORY INFECTIONS IN CHILDREN

JOHN F. CAREY, M.D.

JOLIET, ILLINOIS

The pediatric group appreciates the privilege of being invited to present a subject to the Medical Section. The majority of this group are in the general practice of medicine and the care of children makes up a great part of your work. Pediatricians are general practitioners also but only to a limited age group.

The subject I have chosen may be rather elementary, still when this condition is the purpose in consulting a physician in nearly half our work among children, then it is worthy of our consideration. A rather personal angle also in the selection of the subject is the ability of one to be more dogmatic in a topic with which he has had the most interest. I have always felt that in meetings such as this that common problems deserve an equal if not greater part on the programs as compared to more scientific and unusual topics which require extraordinary clinical facilities to arrive at a diagnosis.

When one is confronted with gastro-intestinal symptoms the case is, as a rule, in the home and our diagnosis is to be made within a period of a few hours. It is through the media of the "old-fashioned house visit" most of us derive our experience. The man who is active in general practice or who is making numerous house visits becomes familiar with the current epidemics and many times also is familiar with that particular patient; the manner in which he has acted with similar illnesses in the past. This familiarity with given cases puts the physicians in a much better position to evaluate the importance of symptoms. This is especially so when symptoms may be far remote from the actual cause of the illness. In no other disease is the possibility of far-reaching complications and varied symptoms

so great as in infections of the respiratory tract.

Of all the amazing variation of symptoms of respiratory infections those related to the gastrointestinal tract are the most confusing. The possibility of hematogenous infection is well known to us and when the symptoms of abdominal pain and vomiting present themselves as an acute illness, one's ability as a diagnostician is challenged especially when there is evidence of recent infection about the nose and throat. He wonders also when diarrhea or constipation enters the picture whether an inflamed appendix is causing the symptoms or whether a primary peritonitis or an intestinal obstruction is the causative factor, or perhaps all is due to a referred affair as is common in pneumonia. To add to this is the possibility of approaching measles or scarlet fever.

Vomiting itself occurs frequently and is the most common of all symptoms in infections of infancy and childhood. As a symptom it may vary from nausea or anorexia to persistent emesis and dehydration. Some children seem susceptible to repeated attacks in ushering in acute infections, and vomiting is so violent and lasting so long that they have been thought to be victims of "cyclic vomiting." So frequently also when one encounters an epidemic he may see several cases with an acetone breath, and the case is called "epidemic acidosis." Zahorsky, I believe, called the symptom-complex, occurring in winter "hyperemesis heimis" and when it occurs in summer one often consoles the parents with the diagnosis of "summer flu."

As a general rule the vomiting will last only 24-36 hours but in some cases it is more protracted and will last several days, and dehydration becomes alarming which may require administration of fluids by other than the oral route. The vomiting may disappear for a day or so only to return, especially if food is given too early. It seems an inherent desire of the mother to worry when a child will not eat and so often is a grave cause of anxiety on the part of the grandmother. If the child is at all able to stand on two legs he is allowed up, and if one thing is absolutely necessary in these cases it is complete rest and quiet. It is essential to withhold food and supply liquids. Even though liquids are vomited it at least makes the act much easier and some is bound to be taken up by the system. If medication to secure rest is necessary I know

of no better remedy than a suppository containing some barbiturate.

Constipation is the rule in infections of this type. This also is most distressing to the parent and so often they insist that the bowels must move even though food has not been taken for days. Purging only distresses the patient since we all agree the intestinal tract is not the main avenue of escape of all toxins.

Diarrhea is a common symptom often occurring in the form of an epidemic even affecting adults in the family. It has frequently been designated also according to seasonal occurrence into summer or winter flu. Five or six bowel movements a day is the rule. They are liquid, yellowish in color and contain mucus, rarely blood. This may last two or three days. A bland diet is usually all that is necessary in treatment unless there is tenesmus and pain; this may require small doses of paregoric.

Pain in the abdomen is one of the most common symptoms of this group. As a matter of fact it is encountered in infections of the upper respiratory tract more often than in all other infections combined. This may be epidemic or it may occur sporadically. Frequently it seems common to certain children with each attack of cold, often leading to diagnosis of chronic appendicitis. It seems, I believe, to be very common in allergic children also in children who have a tendency to be obese. It is by far the most common reason for consulting the physician both for acute and recurring attacks.

The pain may be sharp and intermittent and if questioned the child will invariably lay the hand horizontally across the epigastrium. If questioned further the distress will be designated by one finger as occurring an inch or so above the navel. There is no tenderness present and this pain may subside after the first day or it may continue and last even after the signs of an upper respiratory infection have subsided.

This latter type of pain has been referred to as being produced by inflamed mesenteric glands. This has been confirmed frequently by laparotomies performed where the question of pathological findings in the abdomen was in doubt. The common location for these glands is in the right lower quadrant where they may be palpated at times. The persistence of these glands with the intestinal peristalsis probably accounts for the continued pain after the subsidence of

the original infection. It is the presence of this pain and tenderness of these glands in the right lower quadrant that taxes the ability to differentiate from appendicitis. As a rule, however, the pain will not shift from the region of the navel to McBurney's point so characteristic of appendicitis and while there may be tenderness present, there is very little rigidity or spasms of the muscles.

However, in a certain group of these cases one is very much in doubt as to the changes present since we are all familiar with the fact that appendicitis is about twice as frequent during the epidemic season of colds as in the non-epidemic season. However, if appendicitis does occur during the course of an upper respiratory infection it is as a rule ten days to two weeks after the original onset of symptoms.

With this in mind, the presence of signs of a recent respiratory infection must not lead us entirely from a diagnosis of appendicitis, but must also put us on guard that it is not occurring incidental to it. This is also so in measles, scarlet fever and pneumonia. It is not at all uncommon to hear of or to see appendicitis occurring just previous or during the presence of these diseases. The symptoms may be so alarming and severe that only one method is positive in making a diagnosis and that is by exploring the abdomen. Conservatism, without too much self-confidence, should be the rule. A doubtful case must be kept under close supervision and seen frequently, not giving too much assurance that everything will be all right without surgical intervention. On the other hand, if one explores too many of these abdomens only to have symptoms recur after operation, he will be abashed somewhat since the public no longer believes in adhesions causing postoperative distress. A conservative attitude and close supervision and necessary surgical judgment usually is necessary. There are no laboratory methods available which are going to be any great help to you. We often wish endoscopy would develop to such a stage that we could insert an instrument through a tiny incision and take a look.

The examination of the abdomen reveals two crucial points by palpation, viz.: localized tenderness to pressure and a localized area of involuntary muscular rigidity. However, before palpation is attempted one must first secure the confidence of the child. He must be ap-

proached slowly and quietly and be addressed in his own language. A brusque, harsh attitude only increases his fear, making a good examination difficult. Dr. Abt has said the child should be approached with a warm heart and warm hands. A resident at Children's Hospital suggested that a small child was like an ostrich; if his head was turned from the examiner he had less fear, so he suggested turning the child over the mother's shoulder and making an examination of the abdomen with the physician not in clear view. The left side should be examined first and to get our bearings; the area over the recti muscles are palpated first—the left and then the right. These areas are naturally slightly more tense than the lateral edges of the abdomen. Then the area over the appendix is palpated. When there is an area of spasm over an involved appendix it is usually more tense than even the degree over the recti muscles. The localized rigidity and tenderness appears rather early, as the lymphatic hyperplasia in the appendix and relatively thin layers goes to make the infection spread rather rapidly to the peritoneal surface. This also forms a basis for our general opinion that an appendix ruptures more readily in children than in adults.

I have mentioned the abdomen first because it is the region in doubt. So far as the other areas are involved, examination is probably less distressing to the patient than others except the chest where presence of pneumonia must be ruled out. Examination of the throat and proper evaluation of pathological conditions is gained only by developing the habit of always looking at them. The appearance of throats varies in different individuals and in different epidemics. It is not at all uncommon to recognize an epidemic of similarly infected throats during a current epidemic. It is not necessary to have a follicular tonsillitis present to make a diagnosis of a throat infection. Redness of the pillars or pharynx and swelling of the tonsils is sufficient.

Often the acute symptoms have subsided and one encounters a postnasal discharge or lymphoid hyperplasia in the pharynx, or infected ears, or a cough. Most of these signs are pathognomonic of recent involvement of the area no matter how normal the throat may appear at the time of the examination.

The differential diagnosis often rests on

whether or not in the presence of the respiratory infection the appendix has been involved. The very fact that it may must put one on guard. However, it is by no means a common complication. The percentage of respiratory infections acting as primary foci for involvement of the appendix is exceedingly low compared to the number of colds. There are only two cardinal points in diagnosis; they are localized tenderness and involuntary spasm of the muscles. The age of the child is rather significant in that appendicitis is rare under two years and increases gradually to the eighth year, when it is just about as common as in young adults.

The presence of primary peritonitis which probably occurs more often as a result of a hematogenous infection than it does from a ruptured viscus makes a diagnosis often difficult. In very young children, it is often impossible except at postmortem. However, the anxious pinched facies and generalized abdominal pain with general tenderness over the abdomen, but particularly over the lower portion is characteristic. Also there is distension which though absent early increases rapidly, finally becoming more prominent even to a shining appearance over the epigastric area.

In closing I would like to stress the following points: symptomatology in children is frequently gastro-intestinal in character, still the true pathological condition is in the upper respiratory tract. The pediatricians early were considered specialists on gastro-intestinal upsets, but as Brennemann puts it they have long since shifted their interest to the respiratory tract.

Pain in the abdomen is caused by upper respiratory infections more often than by all other causes combined.

Conservation and frequent observation during the questionable stage is essential. However, when there is too much doubt after thorough contemplation, laparotomy and appendectomy is the wise procedure.

DISCUSSION

Maurice Blatt (Chicago): Dr. Carey's very excellent paper opens a theme of never-ending interest to the physician who is responsible for children's health.

Were I to have suggested the title, it would have been "The Gastro-Intestinal Manifestations" rather than "Symptoms of Upper Respiratory Infections since the symptoms commonly noted in the gastro-intestinal tract are but part of the general picture. Dr. Carey

discusses two types of infection: the first is respiratory in origin and the second has its primary localization in the gastro-intestinal tract. The two types should be distinctly differentiated.

It is my impression that the gastro-intestinal symptoms accompanying infections of the upper respiratory tract have the following natural history and pathogenesis:

In early infancy there is little or no sensitivity in the pharynx or tonsils and consequently during the first few months of life evidence of active respiratory infection is comparatively uncommon.

It is unusual to observe erythemas, inflammatory reactions, or edema in the pharynx of very young infants except when the mucous membranes have been previously traumatized by rough examination or treatment.

It is not uncommon to have nonspecific infections of the gastro-intestinal tract in early infancy due to organisms other than dysentery, typhoid, hemolytic streptococcus, or the salmonella group. These infections are due to the type of organisms found in the nasopharynx.

When the nasopharynx has become sensitized by repeated infection, inflammatory and catarrhal reactions are recorded. This is evidence by a reddening and edema of the mucous membrane of the postpharyngeal wall, anterior pillars and of the nose. It is always more severe if complicated by adenoid tissue interfering with aeration and drainage. Tonsillar tissue is not yet sensitized in this early age and consequently tonsillitis is rare.

The incidence of follicular tonsillitis corresponds fairly closely to that of the beginning of rheumatism and heart disease. It is unusual to see an acquired heart disease before the third year of life. We see fetal endocarditis and congenital heart disease earlier. Apparently it takes a certain length of time for these young tissues to become sensitized to organisms which can cause this phenomenon.

Absorption of toxins and a rise in temperature often accompany nasopharynx infection. This localized tissue and generalized systemic reaction is followed by a decrease in the hydrochloric acid secretion in the stomach.

One of the functions of high gastric acidity is the protection of the intestinal tract against swallowed organisms. During febrile infection of the upper respiratory tract this protective action is materially decreased, and swallowed mucus containing virulent organisms passes on into the alkaline intestinal tract. The flora of the gastro-intestinal tract often changes before local effects of such infections are found in the nasopharynx.

These organisms find a fertile field for growth in the normal intestinal content. They further elaborate toxins and produce intestinal irritation evidenced by enteritis, diarrhea, vomiting and abdominal distress. Many of these organisms pass through the walls of the gastro-intestinal tract, producing a localized lymphadenitis. Localization of the lymphadenitis around the

cecum must be thought of in the differential diagnosis of acute appendicitis in infancy and childhood.

Appendicitis in infancy is rare, but it does occur. It is common in childhood. Swollen lymph nodes producing symptoms are more frequent, but the differential diagnosis often can be made only after laparotomy.

It is my impression that appendicitis usually is not a blood-borne infection but is secondary to the implantation of organisms in the intestinal tract, the infection of the appendix occurring by direct extension. Doctors Coleman and Bennett have a beautiful anatomic demonstration illustrating these two diseases.

A recent review of migrating peritonitis by Saffir has demonstrated the passage of organisms and of leukocytes through the wall of the apparently normal bowel. Dr. Samuel Hoffman has recently demonstrated these same findings in a child. Pneumonia of the lower lobes was present. In pneumonia of the lower lobe segmental rigidity of the upper abdomen is common. Dr. Hoffman's patient had this segmental rigidity, and I believed it was secondary to diaphragmatic pleurisy. On postmortem, however, it was found to be a "migrating peritonitis." These are not hematogenous but all infections by continuity.

My conclusions are that infections of the upper respiratory tract are manifested by:

Neso-pharyngeal mucous membrane inflammation and gastro-intestinal mucous membrane inflammation. The infection may extend further and result in acute inflammation in and outside the wall of the intestines in the regional lymph glands, being associated with diarrhea and vomiting. Secondary invasion of the connecting viscera and peritoneum may also occur.

COOPERATION OF THE COUNTY SECRETARIES WITH THE SCIENTIFIC SERVICE COMMITTEE

ROBERT S. BERGHOFF, M. D.

Chairman, Scientific Service Committee

CHICAGO

I appreciate very much indeed the invitation to come and talk to you tonight. It is the second invitation I have had to address this group. The first was in Springfield three years ago, and on both occasions I asked for permission and received it to make an informal talk rather than to read a paper.

The reason for this is obvious. In the past four years, as Chairman of your Scientific Service Committee, I have contacted most of you personally and through Jean McArthur's office in the past four years I have met the rest of

you indirectly. In consequence I feel almost in the family of the county secretaries and it would seem to me as senseless to read you a formal paper—just as senseless as it would be to read one to my wife.

I am to talk to you about the cooperation of the Scientific Service Committee with the county secretary and *vice versa*. Before I do so I should like to take a few minutes to talk to you about the county secretary as an individual as I see him and know him. Through my four years of chairmanship of this committee I have come to know the county secretary much more intimately than does the average physician. I have come to realize what an important position he holds in the state society medical set-up. A good county secretary can and does make his county society successful. If occasionally a man is not fit for that position, he can very readily by his lack of interest lead to the ruin of his society. The county secretary represents the general manager of a big business; all the details of management fall upon his shoulders. He is elected for one year, but sometimes his term of office runs to three or five years, and if he is especially good he may get a life sentence. He carries on much on his own initiative. He does not have the time or the opportunity to ask for advice. He has to be an efficient man. He develops, because of these responsibilities, I think, a personality more or less his own.

To exemplify that point that a county secretary is a little different from the average doctor I will take a few minutes to tell you a story that happened three years ago and has to do with a county secretary. Three years ago a patient drove up to Chicago from downstate with a bad coronary heart. He drove up with his wife. He looked me over and he said:

"Have you made the proper accommodations for me and my wife and Sirook?"

I looked them over and said: "Yes, for you and your wife, but Sirook cannot stay here."

Sirook was a Persian cat.

This fellow said: "Then I'm going back home if I cannot keep the cat in the hospital."

I told him he could not keep the cat in the hospital and he looked at me again and said: "Sirook has more personality than you have."

I was inclined to agree with him, but I said:

"I'm sorry, but the Health Department will not allow the cat to stay in the hospital."

He decided to take the cat to the veterinarian hospital and then he himself went to the hospital. At the end of six weeks this patient was ready to go home, and when I congratulated him on his progress, he said that it was the worst thing he had ever done in his life. He admitted that he had recovered his health, but he continued, "While I was being taken care of I thought Sirook was entitled to the same care. Those doctors advised a tonsillectomy. I insisted on consultation, and the consultant agreed, so they took out Sirook's tonsils and I am taking home just an ordinary cat minus personality." Then he said something else. "I got that cat from an unusual man. He had a personality like Sirook's. He is a busy doctor in my district. He is the man who runs the medical society. That doctor goes up and down the street and never smiles much except through his eyes, but when that man's coat gets ruffled up and his back is up, you should see people scatter." He referred of course, to the county secretary.

Now I want to talk to you briefly about the work that for the past four years I have tried to do as Chairman of the Scientific Service Committee and what I would like to have you do for and with us. I can never get up to talk about the interesting work of this Committee without saying, and truthfully, that without the efficient help of Jean McArthur I could not have carried on. She could do it all by herself; she is marvelous.

Ten years ago the Scientific Service Committee was formed in this state and I think Dr. Hutton was the first chairman. We now have a very reliable list of speakers with a very varied list of subjects. As you know, the only function of my committee is to furnish you with programs. We can and do give you individual speakers of your own choice. We can and do give you clinics of various kinds. You can select your own speaker and on a given day we will send you these men. You can have, three, six or sixteen or more patients whom they will examine, and then they will wind up the evening with a talk on their special subject.

This last year we offered you something new: a clinical conference. You have been mailed a

new list of speakers, which is the largest we have ever had to publish. It covers all men in the larger institutions and cities as well as speakers in the county societies throughout the state. If you want a speaker on medicine you can, through Jean McArthur, select one or two men who will come from Chicago or any part of the state you want. They will take up a subject with you and by selecting some of your own local men to open the discussion they will carry on for an hour or more, as long as you please.

You can also, and we prefer it, arrange with Jean McArthur to have us furnish you with three or four programs in succession, one medical, one surgical or any specialties, and we can give you seasonable topics for discussion. For instance, a medical subject for October, surgical for December and in the middle of the pneumonia season we can give you a symposium on pneumonia. We have the speakers. We have a wide variety of subjects. We have different services to sell. As you know, through the Educational Committee of the State Society all the expenses of the speakers is borne by the State Society. We have found in Chicago that when we have out of town speakers the attendance is up, and so we feel if you allow our committee to send you programs it should help your attendance. We are eager to serve every county in our state. There still remain about twenty counties which have not called on our committee once. We are eager to serve all of you.

Now what can you do for us? We would appreciate it if you would call on us and let us serve you. I would appreciate it very much if you would select from your own membership men who can speak so that we can put them on our list to send to other county society meetings, because you must have many men perfectly qualified to give a talk of interest to a neighboring society. Also we would like to have you give us plenty of notice, particularly if you are selecting an individual speaker; we prefer a month or so.

We have given you a card here tonight which takes just a minute to fill out, and I would appreciate it if you would fill it out. Have you used us and how many times?

In conclusion I want to say that my four years have been as interesting as any of my lifetime.

I have enjoyed it. I think we have been able to do some good work. We will do more work if you give us a chance, and I thank you for your cooperation.

DISCUSSION

Miss Jean McArthur, Chicago: I would like to add a word to what Dr. Berghoff has said about giving us notice ahead of time. We realize there are emergencies and we are always glad to help you when it is possible, but if you do plan your meetings some time ahead we can get almost any speaker you want because we have marvelous cooperation from the men listed in the book. If there is someone you want who is not in the list in that book I am sure Dr. Berghoff can secure him. We also can send proper publicity to the newspapers; we like to keep them informed so the people know that their own county society has a place in medicine and that the local doctors are giving papers themselves. Most of the newspapers throughout the state are weeklies and if we do not get our notices there in time they are not printed. These contacts with the press and with the public are extremely valuable to the medical profession.

Dr. Harold M. Camp, Monmouth: It is always a pleasure to tell of the cooperation of the Educational Committee and of the Scientific Service Committee. I think the Scientific Service Committee was a brainchild of Dr. Hutton; I believe he was the first one to suggest it and I happened to be a member of the original committee.

It is quite possible that we are not spending as much money and doing quite as much postgraduate medical instruction work in our society as in some others, but I do believe we have a splendid system and that we are getting our efforts across where they are appreciated. I think we have reached every one of the one hundred and two counties in Illinois. We have ninety-one medical societies and we have several counties that have joint societies. We have three counties that have no medical society but the members belong to an adjoining county society. Our services in the Scientific Service Committee have reached every county in Illinois, some of them many times. Just remember that Miss McArthur will do all the publicity work for the meeting; she will send out the announcements from her office, make up the program, arrange for the speakers and do everything. We should be proud of the fact that in our set-up, we use only funds from the Society, and receive no assistance from Government, Federal or State, consequently it is our post-graduate service and we owe no allegiance to others outside of the Illinois State Medical Society. The Educational Committee and Scientific Service Committee will welcome suggestions from county societies or individual members as to methods by which our post-graduate services may be extended.

CATARACT VS. GLAUCOMA

LOUIS BOTHMAN, M.D.

CHICAGO

The differential diagnosis between primary glaucoma with complicated cataract, and cataract with secondary glaucoma, is often very difficult to make. The fact that the glaucoma must be treated first and the cataract later, in both of these conditions, does not make the cases any easier to handle.

It is important to make the correct diagnosis early, for both the medical and surgical management should be altered to suit the case. If the diagnosis is incorrect and a trephine operation for glaucoma done on an eye with a secondary glaucoma for cataract, the lens extraction can be done later, but there is frequently a low tension with cystic bleb which may very rarely lead to a late infection. If an iridectomy is done for relief of tension and as preliminary to lens extraction, in a case of glaucoma with cataract, the tension frequently remains high, and a second operation may be needed to control the tension and save the vision, until the lens is extracted later.

DIAGNOSIS

The age of the patient may be of little value in the diagnosis, for both conditions occur in middle or late adult life. If the patient is a very good observer, as well as intelligent, the history may be of value in the differential diagnosis.

A patient who has had frequent attacks of redness, with or without pain, nausea or emesis, and who has observed halos of prismatic colors around lights at night and gradually reduced vision for either distance or near, or both, is very likely to have primary glaucoma with complicated cataracts. If the history is one of slow loss of vision, and the redness and halos occur later, it is more likely that the glaucoma is secondary to the cataracts. We all know how insidiously glaucoma appears, without any other symptoms except the gradual loss of vision, so that we know the history alone is insufficient to make a diagnosis.

SUBJECTIVE EXAMINATION

Vision alone is of little aid in diagnosis. The

Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Rockford, May 3, 1939.

field examination is of primary importance. If the patient still has sufficient vision, both central and peripheral field tests should be made.

Careful perimetry should be done to discover a possible Bjerrem scotoma or enlargement of the blind spot in the central field tests, and for the Roenne step, nasal field loss or peripheral constriction in the outer fields. If the vision is reduced so that this test isn't possible with the usual targets, a light field should be taken.

The findings of a Bjerrem scotoma, Roenne step, or nasal field losses, are more frequently seen with primary glaucoma. Enlargement of the blind spot, unless it is due to congenital anomalies, posterior staphyloma or such conditions around the disc, is often due to pressure atrophy from long continued intra-ocular tension. Constriction of the central field to within a few degrees of the fixation point is most often due to primary glaucoma.

These field defects may be found with secondary glaucoma, but with less frequency, and they may be less marked if the tension is lowered; while with glaucoma, reduction of the tension is less likely to show larger fields if the glaucoma has been present long enough to have produced secondary cataracts. Peripherally constricted fields, even with uniform constriction to within 10° of the fixation point are, in our experience, more likely to be due to secondary glaucoma from the swollen lens.

OBJECTIVE EXAMINATION

The size of the globe may be of some aid in the diagnosis. A small eye, which is usually hyperopic, with a corneal diameter of 10 mm. or less, is more likely to have glaucoma with complicated cataracts, than vice versa; whereas, a large globe, frequently myopic, with cataract and tension is more likely to be a glaucoma secondary to a complicated cataract.

CATARACTS

Slit lamp study of the cataracts is of aid in the differential diagnosis. If the cataract is not mature, the opacities can be localized and their size and shape studied. The senile cataract with glaucoma is more likely to have a tense capsule with edema of the epithelium, riders or sector shaped or linear radial opacities, and senile nuclear changes; while the cataract complicating glaucoma is more likely to have chiefly a sheet

of granular, fawn-colored, posterior subcapsular opacities with similar anterior subcapsular changes, and a clear or relatively clear nucleus.

In these cases the iris diaphragm may appear to bulge forward. In both, the anterior chambers are shallow. The posterior cornea may have brown pigment flecks, which must not be confused with the keratitic precipitates of iritis. The color of the iris may be altered in both conditions, but the iris body is more likely to be atrophic in primary glaucoma, and less atrophic or even swollen in the type secondary to cataract. If the disc is visible it is much more likely to have an ampuliform excavation in primary glaucoma, and less likely to be pathologically excavated and even appear normal with secondary glaucoma. Response of the eye to medicinal therapy may be of some aid in the diagnosis.

In primary glaucoma with anterior synechiae, miotics are less likely to be effective, while the mechanical blocking of the spaces of Fontana by the swollen iris diaphragm is more likely to be relieved by miotics. Both may respond to sucrose intravenously. In cases with very high tension, eyebaths with an eyecup for 10 to 15 minutes every hour, using 1 or 2 per cent. pilocarpine or 1 per cent. eserine, combined with 100 cc. of sorbitol intravenously, very frequently lower the tension to within safe limits within three to 12 hours.

REPORT OF CASES

Mr. J. J. (61).—4/14/32.—The vision had been gradually diminished for the past year. The vision became smoky in the afternoon. There were no halos or rainbows. RV = 20/200, LV = 20/200. The R peripheral field had a seeing area 10° below, and 30° temporal, nasal and above the fixation point. The L peripheral field was full, except for a sector defect in the lower nasal portion extending to within 15° in 285 meridian. The lenses showed nuclear sclerosis with a dense posterior cortical opacity supernasally. The discs appeared to be normal; pupils R and L 4 mm.; Sch. R56 L61 mm. of Hg. The tension was reduced with pilocarpine to R35 L30.5 mm.

L iridectomy was advised and done and on 4/22/32 the Sch. was R25 L14 mm. This was followed by an extracapsular L lens extraction. The second day after the cataract extraction the wound lips bulged and much cortex appeared above. A groove appeared in the horizontal axis of the cornea. A conjunctival flap was prepared, the wound opened widely, a bit of necrotic cornea removed, the anterior chamber was emptied, and the flap pulled down over the cornea. A milk injection was given, and the temperature rose to 103.2° . The R. Schiotz was 35.5 mm. on discharge. The globe

remained injected, deep corneal blood vessels appeared, and the wound continued to shrink. There was no light perception, and an enucleation was done.

8/25/32.—The histological sections showed an unhealed corneal wound, epithelial cyst in the wound tract, deep keratitis, atrophy of the uvea and retina, cyclitic membrane in anterior and posterior chambers, detachment of the choroid, and retinal and supra-choroidal hemorrhages. The R lens became more opaque, and vision was reduced to hand motion at one foot. Pupil 1.5 mm. and Schiotz 17 mm. under pilocarpine.

11/6/33.—A combined R lens extraction with complete iridectomy was done. The postoperative course was very stormy. The iris was pulled up to within 5 mm. of the superior limbus, and the small pupillary space filled with a gray membrane. Many new blood vessels appeared on the iris and cornea. The atrophic iris bulged forward, touching the posterior cornea. Large blood vessels ran parallel to the slightly depressed operative scar.

4/1/35.—The eye was pale, soft, and had no perception of light.

This was a case of glaucoma with complicated cataracts. The R lower half field loss and the L lower nasal quadrant loss should have been a warning. The iridectomy should not have been done. A filtration operation might have been preferable. A longer interval between iridectomy and lens extraction might have prevented the subsequent choroidal atrophy, etc. With the poor result in the left eye the right need not have been operated on. In both eyes there seemed to be no recuperative power, though the patient appeared to be a hale and hearty man.

In this case, no matter what surgery was attempted, we feel that the result would have been the same.

Mrs. H. G. B. (57).—On 12/27/36, when admitted, the patient stated that she had been unable to read with the right eye for three months, but could still read with difficulty with the left. Distance vision had become gradually worse during the past three years. The eyes had often been "bloodshot," but there had been no pain or halos.

Findings: RV = 5/200 LV = 20/200. The right temporal and palpebral conjunctiva was injected. Both lenses had anterior and posterior cortical riders with moderate nuclear sclerosis, some R "Wasserspaltung." R fundas details could not be seen. L disc was normal. Pupils (homatropine) R and L 7.5 mm. Schiotz R and L 31. Pilocarpine 2 per cent. and eserine 1 per cent. reduced the tension to only 29 mm. after an hour. Eserine 1 per cent. was ordered q.i.d., and in 48 hours the pupils were R and L 1.75 mm., and Schiotz R20 and L21.5 mm. of mercury. The R Bjerrem field was constricted to 5° with a 6 mm. test object, and the right to 10° with a 3 mm. target.

R iridectomy was done on 12/29/36, and eserine 1 per cent. used q.i.d., in the left eye.

On 2/1/37 RV = Counted fingers at one ft., LV = 20/200-1. Pupils R 5x7 mm. L 2 mm. Sch. R 25.5 L 24 mm. R extracapsular lens extraction was done.

3/31/37.—R + 12.50 + 1.50c180 = 20/30 + 3.

11/11/37.—R pupil 3x4 mm. L 6.5 mm. (homatropine). Sch. R20.5 L29. The L lens had a dense nuclear sclerosis, marked prominence of the adult nucleus, and a sheet of vacuoles beneath the anterior capsule. Miotics were continued and L combined intracapsular lens extraction was advised; this was done on 11/12/37. Aside from a slight hemorrhage on the vitreous, there were no complications until 12/18/37; the Schiotz R = 28 L = 94 mm. Pilocarpine 2 per cent. q.i.d., was ordered, and the following day the Schiotz was 75 mm. Under pilocarpine baths the tension dropped to 63 mm. After 400 cc. of sucrose intravenously, the tension dropped to 29 mm.

On 12/21/37 a L cyclodialysis was done in the lower temporal quadrant. There was severe pain for two days, and moderate anterior chamber hemorrhage. Descemet's membrane was detached at 4:30 to 6 o'clock.

1/12/38.—Pupils R3x5 mm. L4x6 mm. Schiotz R22 L16 mm. L + 11.00 + 3.00c120 = 20/60 + 1.

1/5/39.—Schiotz R22 L17 mm. An R needling was done.

1/10/39.—Schiotz R37.5 L17 mm. Pilocarpine 1 per cent. was used which kept the tension at 19 mm.

3/2/39.—R + 13.50 + 1.00c40 = 20/12. L + 14.00 + 1.00c110 = 20/20. The Bjerrem fields were 35° and the R blind spot was 1½ times normal size. Pupils R and L 3x4 mm. Schiotz R17 L16 mm.

This was a case of cataracts with secondary glaucoma. The tension was readily controlled by iridectomy, and the lens extraction later done without difficulty. The attack of glaucoma following lens extraction is more likely to occur in an eye with preoperative glaucoma attacks, but it also occurs without previous glaucoma.

Cyclodialysis is the operation of choice in this type of glaucoma.

Mrs. L. P. (75). 4/9/36.—Six weeks ago pain and redness appeared in the left eye. This radiated to the jaw and kept the patient awake. The left vision was no worse than at onset. She did not know that she was unable to read with the left eye. She had R iritis 12 years ago, but no trouble since. She has had rheumatism in the right arm for four weeks.

Findings: Left eye had a slight circumcorneal injection and shallow anterior chamber. Pupil was R4.5x5 mm. and fixed. Each lens had a nuclear sclerosis. Sch. R and L was 23 mm.

4/16/36.—The left eye has had severe pain for five days. She noticed halos for the first time last night. RV = 1.0 LV = 0.1 Sch. R24 mm. L69 mm. R disc was normal. She was admitted to the hospital. The tension was reduced to 17 mm. and a L superior iridectomy was done. Tension study of the right eye

showed highest tension was 28 mm. at 11 P. M. LV—225W — 0.25c180 = 0.3.

6/22/36.—She was admitted to the hospital and tension study showed a rise to 45 mm., and R superior iridectomy was done. Both lenses showed cortical opacities progressing and vision reduced to R and L 0.2. Sch. R was 20, L25.

The tension remained normal and lenses became more opaque over an eleven months' period. The left vision had always been poorer than the right and it was decided that the left eye had always been amblyopic. A R extracapsular lens extraction was done on 5/13/37.

7/21/37.—The R Schiotz was 52, L29.

A R trephine operation and needling was done on 8/22/37. Some vitreous presented.

11/9/37.—R + 10.00 + 2.00c30 = 5/75.

1/4/38.—R needling was done.

4/12/39.—R + 12.00 + 1.00c90 = 1.2-4. Sch. R25.5 L17.

The Bjerrem fields showed peripheral constrictions only, R to 25°, L to 10°. The blind spots were of normal size.

The left lens has not been removed.

This was a case of senile cataracts with secondary glaucoma. The history of old iritis in this case could be ignored, for there was no evidence of old precipitates, posterior synechiae or cataracta accreta. We believe that the detension operation on 8/22/37 should have been a cyclodialysis without any needling. That should have been done later. It was repeated five months later with a good result.

SURGICAL TREATMENT

Cases of secondary glaucoma following cataracts should have a broad, complete, superior, iridectomy. In these cases it is not likely that the anterior synechiae have formed, so that the iridectomy will serve to relieve tension, and is also preliminary to cataract extraction. Such an operation does not interfere with a subsequent lens extraction.

In primary glaucoma the reduction of tension to preserve vision is the first consideration. If the cyclodialysis is effective it would be the operation of choice. Here, the result would not be interfered with by a subsequent lens extraction. If a trephine, or iridencleisis operation is done, the subsequent lens extraction is more complicated, for the filtrating scar must be saved to keep the tension normal. This means either a corneal incision with corneal sutures, if the extraction is done above; or a lens extraction via the inferior limbus. Either can be done successfully.

In our opinion, attempts to combine lens extraction with detension operations should not be

attempted, for the results are too often disastrous. It is far more safe to have the tension normal, the eye quiet and pale, before the cataract extraction be attempted. The danger of an expulsive hemorrhage of the choroid is thus minimized, and there is no lens cortex and less bleeding to interfere with establishment of aqueous drainage from the eye.

PROGNOSIS

In cases of primary glaucoma with complicated cataract the tension has been high over a considerable period of time. The high tension, which led to the disturbed lens metabolism and cataract, also damaged the optic nerve fibers, so that it would be unreasonable to expect the restoration of good vision. In these cases, if the fields indicate the presence of central vision and the scotoma not too near the fixation point, the outlook can at least be hopeful, but very guarded.

Cases with senile cataracts which develop high tension are discovered more promptly, and the optic nerve fibers are less likely to have sustained permanent damage. In such cases, the outlook is much better and the prospect of restoring useful vision is fairly good.

SUMMARY

Cases illustrating glaucoma with complicated cataract and senile cataract with glaucoma are presented. The differential diagnosis is discussed. The prognosis for maintaining vision in the former is extremely grave, while the prognosis in the latter is much more favorable.

CONCLUSION

It is very important that the correct diagnosis be made, not only for its value in prognosis, but because the results obtained depend on the treatment and surgery done. An incorrect diagnosis may make it necessary to do several surgical procedures, which these eyes do not tolerate too well.

310 South Michigan Avenue.

DISCUSSION

Dr. Harry Woodruff, Joliet: I think one should have in mind the conditions which can cause loss of vision when a patient presents himself. In an adult or an older person with a history of loss of sight you have in mind, of course, a number of conditions, but probably the most prominently so, a beginning cataract or the possibility of glaucoma. If you have these things in mind when you start in you are not apt to lose them; you eliminate them, so to speak. The problem of

which comes first, the chicken or the egg, is more difficult. You have a case of lens opacity, elevated tension and, as Dr. Bothman said, you may not be able in every case to decide which was the primary factor. Many ophthalmologists follow the practice in all cases of senile cataract where an operation is necessary, of doing a primary iridectomy. In that particular instance, of course, it is pretty safe—safer, than to attempt to do all in one operation.

I have not had as much experience as some with the cyclodialysis operation, but I think in the case he has mentioned it was fortunate. In these cases where extraction has been done and they have tension, it may be indicated, yet I am not entirely weaned away from the idea of deep iridectomy. Dr. Allen has been showing us the importance of getting into the base or root of the iris. That can always be done with a fairly deep anterior chamber by using a cataract knife instead of a keratome, and I still believe that a properly performed deep iridectomy still has a much better chance, even in the chronic simple variety of glaucoma, of permanently reducing the tension, rather than an iridectomy with the incision made with a keratome. You never get to the root of the iris, and if you get a reduction in tension you get it because some drainage is established.

I commend Dr. Bothman for reporting that terrible case of the one eye which was lost. In these cases of cataract where an operation is to be performed, the patients are put under some anesthesia such as avertin, to reduce the intraocular tension as well as the general blood pressure. I have found that anesthesia is pretty safe. It certainly greatly reduces the danger of intraocular hemorrhage which is the thing to be feared in an elevation of tension. Of course that takes care of the case immediately, but does not take care of the future of the patient.

I want to commend this paper of Dr. Bothman's because of the painstaking care he has taken in trying to decide as to the best means of preserving vision in these eyes, and I believe with such care and such pains, and having these things in mind we will get better results. Of course we are accustomed always to take the tension of the eye with the fingers, only using the tonometer if we are suspicious. Perhaps we would do better if we did make it routine practice to use the tonometer in all cases of diminished vision.

Dr. H. L. Ford, Champaign, Illinois: I should like to ask Dr. Bothman his details of visual field study. Also, his impression of iridencleisis—not for this particular type of case, but his reaction to the operation in general—where indicated.

Dr. Louis Bothman, Chicago (closing): I fear that Dr. Woodruff misunderstood me in regard to the operation on the case with high tension. All tensions were reduced and kept down for twenty-four hours before operation. Even the case with a tension of 94 mm. was down to 28 mm. before the operation was done. We do retrobulbar injections of adrenalin in preparation for surgery in these cases. The complication was not due to the operation. It was due to deterioration of the eye from a prolonged high tension.

I should have gone more into detail about taking the fields. Many times, in cases with very poor vision, one cannot take a field even with a 1 cm. target. With a large test object or a spot of light there may be only a temporal field. In such a case you are most likely dealing with a case of glaucoma. We try to take the field with a 3 mm. target in all cases. When the vision is greatly reduced we try up to a 1 and 2 cm. target. If this isn't possible we try to get a light field, especially in new cases when the fundus cannot be seen. Occasionally, one sees a mature cataract in an eye with a large detachment. The defect in the light field may be the only indication in such a case which would offer a poor or hopeless prognosis, and if the outlook for recovery of vision is poor, we would prefer to know it beforehand, not after operation.

RABIES CONTROL IN ILLINOIS

CECIL A. Z. SHARP, M.D.

SPRINGFIELD

There is little data as to the prevalence of rabies in the United States prior to 1890. However, the census of that year reported 143 human deaths scattered over some 30 states. Annual reports of human and animal rabies offer fairly reliable statistics from that date. It appears that the incidence of rabies fluctuates from year to year in different communities. Apparently this is due to the fact that citizens in the infected area are frightened into carrying out the necessary control measures after the disease has taken the life of one or more humans. It is indeed fortunate that it is possible to lock the barn door before *many* horses are stolen.

Because this disease is of local, state and national importance, its control has been carefully studied for many years. The three principal factors to be considered in the spread of rabies are (1) the source—rabid dogs for over 90 per cent. of the bites in Illinois; (2) the mode of transmission; and (3) the susceptible individual.

We will now take up each of these three steps in order. The source of human rabies is nearly always the dog. The dog receives his infection from another infected animal that has bitten him. While all animals are susceptible to the disease, it is spread by biting animals. Some few cases are attributed to contamination with the saliva of sick animals. The mode of transmission from the rabid animal to the human

is usually the bite forcing the infectious saliva into the wound; rabies is a wound infection. The virus must enter the body through some break in the skin or mucosa. Our third factor in the control of rabies is the susceptible individual. This is the person who has been bitten by, or exposed to the saliva of a rabid dog. His only salvation is prompt and thorough treatment of the wound with fuming nitic acid and a complete course of antirabic vaccine. An elementary approach to the problem would indicate that the control of rabies may be effected by:

1. Killing or vaccinating all biting animals or
2. Keeping all humans and animals separated or
3. Vaccinating all humans.

Such proposals are not practicable. However, just as a rat-borne cholera is effectively controlled by killing rats so could rabies be controlled by eliminating the stray and ownerless dog.

In England during the year 1895 no less than 672 human deaths were attributed to rabies. There was an enormous reservoir of infection in the canine population. At the turn of the present century the greatest rabies control program ever initiated was carried to completion in England. All dogs were required to be muzzled for a period of two years; all unmuzzled dogs were destroyed. From that date all dogs brought into England must be kept in quarantine for a period of six months. In this manner rabies has been completely eliminated. No cases made their appearance until a few dogs were brought in by airplanes at the end of the war. However, this has been stopped, and again England is free of rabies.

The British found Australia to be free of rabies and have succeeded in keeping it so by placing a six-months quarantine on all incoming dogs. Such a program, to be effective, need not cover an entire continent. Rabies is practically non-existent in Denmark, Norway, Sweden and Holland. This has been accomplished by strict dog control.

Until we make a concerted effort to kill all stray and ownerless animals, we have no way of knowing how large this unowned dog population really is. In 1936 the City of Decatur killed 8,600 ownerless dogs and 3,626 ownerless cats. During that year there were reported only 209 dog bites. None of the animals were rabid.

In 1937 Dr. H. C. Rinehart, Chief Veterinarian, Illinois Department of Agriculture, estimated there were over 350,000 dogs in Cook County. Chicago, however, had only 24,000 taxed dogs.

The Illinois Department of Agriculture has jurisdiction over the placing of animal quarantine in Illinois. Township-wide quarantine is placed in those areas where rabid animals are found. It is the duty of the local law enforcing agencies to carry out the quarantine. In view of the fact that practically all counties in Illinois suffer damage to live stock from stray dogs it is hard to understand why local officials are not more interested in preventing this economic loss. This loss averages over \$200,000 per year in our state.

The Illinois Department of Public Health has been charged with the free distribution of rabies vaccine to persons reported to need the treatment for the prevention of rabies. 5,032 persons were given a complete series of rabies vaccine in 1937. During that year we had four deaths from rabies, only one of this group received any vaccine. A check on the reported number of deaths for rabies in the years 1918-1937 inclusive in Illinois reveals the fact that 88 human deaths were reported as caused by rabies. There appears to be an increase in the incidence of rabies in both dogs and man every eight or nine years. This is followed by a decline for about three years, then a steady rise until the peak is again reached.

An adequate program for the control of rabies in Illinois has already been initiated and is being carried forward. Educational demonstrations, lectures and movies are shown in public schools and to interested groups. News releases are published by the Department of Public Health, and literature is distributed by both the Department of Public Health and the University of Illinois. The Department of Agriculture is of the opinion that 95 per cent. of the dogs vaccinated with the single injection of rabies vaccine are immune for one year. However, relatively few downstate dogs are being vaccinated. The chief action of the Department of Agriculture is in securing the proper enforcement of the present laws relating to dogs.

The Department of Public Health examines the brains of all animals submitted for determination of rabies. The results of this examination are sent to the person submitting the head, and

specific recommendations regarding the treatment of exposed persons accompanies this report.

The physicians report all animal bites and these reports are followed up by a questionnaire seeking information in regard to the status of the animal and the need for treatment of the bitten individuals.

Each positive animal head is reported to the Department of Agriculture and an investigator is sent into the area for a checkup. The investigator recommends some control measures, usually a state quarantine for a given area. This quarantine is advocated for a period of 90 days following the last reported case of rabies. In those areas where the local officials really co-operate in the enforcement of the dog quarantine the control is very effective.

While we do have localities where the officials practically ignore the quarantine, we must in all fairness state that many officials request the aid of the Department of Agriculture in the control of rabies. A forward-looking group of local officials can save almost any county in our state \$2,000 annually in damage done to livestock by simply killing all unlicensed dogs. This means a persistent all-year effort in ridding the community of these unwanted marauders. Our future control efforts must be directed at educating the local officials.

RABIES DEATHS IN ILLINOIS BY YEARS			
Year	Deaths	Year	Deaths
1918	2	1930	3
1919	4	1931	4
1920	1	1932	4
1921	1	1933	7
1922	0	1934	6
1923	0	1935	5
1924	3	1936	9
1925	1	1937	4
1926	3	1938	5
1927	11		—
1928	14	Grand Total	93
1929	6		

RABIES VACCINE DISTRIBUTED IN ILLINOIS			
Year	14-dose Treatment	Extra 7-doses	Deaths
1934	1459	361	6
1935	2248	384	5
1936 (9 months).....	3093	2210	
(3 months).....	2031	657	
	5124	2867	9
1937	5032	2795	4
1938	5124	2867	5

NUMBER OF DOG QUARANTINES ESTABLISHED BY DEPARTMENT OF AGRICULTURE			
Year	Number	Year	Number
1933	12	1937	84
1934	17	1938	45
1935	34		—
1936	63	Grand Total.....	255

POSITIVE LABORATORY EXAMINATIONS FOR RABIES IN DIFFERENT LABORATORIES IN ILLINOIS DURING FIVE CALENDAR YEARS					
	1933	1934	1935	1936	1937
Main Laboratory, Springfield...	81	210	130	110	129
Branch Laboratory, Carbondale.	131	167	155	132	130
Branch Laboratory, Chicago...	16	26	60	138	120
Branch Laboratory, Urbana...	..	..	..	..	..
Chgo. Health Dept. Laboratory.	11	140	227	502	208
University of Illinois Laboratory of Animal Pathology.....	36	33	77	119	208
Total	275	576	649	1001	795

Dr. Sandor Horwitz, Peoria: The City Council of Peoria has recently passed an ordinance investing the control of rabies in dogs with the Department of Health.

The ordinance provides for immunization against rabies and the licensing of all dogs. It further empowers the Department of Health to require dogs that have bitten persons to be kept under the observation of a veterinarian for 14 days. There is also a provision for the establishment of a dog quarantine.

There was objection on the part of some of the Aldermen to the fee charged by veterinarians for immunization. However, the veterinarians of the city agreed to charge a uniform fee of \$1.50 for this service but this is not incorporated in the ordinance. The veterinarians have also agreed to perform free immunizations for those that cannot afford to pay for the service, while the Department of Health pays for the vaccine used in this group.

Dr. Maurice Gore, Aurora: You take a dog who bites an individual. We wait fourteen days. We presume the dog will die in eight or nine days. Suppose the dog is rabid and he is killed. Will the saliva have the virus at that time and will the brain show the Negri bodies, and will a dog who eventually becomes rabid have the virus in the saliva before the Negri bodies show up in the brain? You take a dog who bites an individual and it is killed immediately. We don't have a chance to determine whether or not the dog is going to be rabid or is rabid at the time. Frequently those heads are negative. Has the dog got the rabies virus in the saliva at that time? Then, if the dog has not got the virus in the saliva and the dog is killed at the time it bites the individual, what is the necessity of giving those individuals the vaccine as a prophylactic?

Dr. H. J. Shaughnessy, Chicago: It is generally assumed on the basis of a limited amount of research—not a great deal it is true—that the virus is present in the saliva of the dog at least a week before the dog shows symptoms of rabies. Of course, it is on that basis that we give vaccine when the Negri bodies cannot be found because the dog is killed too early for them to appear.

Dr. R. C. Farrier, East St. Louis: In our department we carry on a dog bite control. With every report we have of a dog bite our sanitary inspectors immediately try to get to this dog, and we have this dog put up for a period of fourteen days. And if we find the person who owns this dog that has bitten some one who will not confine the dog, we take the

dog away from him and put it in the city pound or get the police after him and make him do it. And I insist that no one start taking the vaccine if the dog is still living and if the dog shows no symptoms of rabies and the person is not bitten on the face. There are two or three things we have to carry on quite a lot of educational work on. There is a deepseated tradition that a human who is bitten by a rabid dog will go mad in nine days. I have been studying the situation very much for the last fifteen years, and find that the average incubation period is from forty days to one year. But the only cases that I have come in contact with is the incubation of about four months.

In East St. Louis about four or five months ago a newspaper reporter came into my office and asked me if we had a reported death of a woman in the hospital. I said, no. He was a very alert sort of fellow on one of the St. Louis papers. He said, "Do you know that woman was bitten by a cat about four months ago and they didn't pay any attention to it?" And they asked the family physician if the woman should take this vaccine. They did a postmortem on this woman and found Negri bodies in the brain, and it was reported as a case of rabies. I have known of a few cases of probable paralysis following the vaccination. Whether it was the vaccine or whether it was something analogous to postdiphtheria paralysis that you get from diphtheria where your diphtheria antitoxin will prevent diphtheria but will not prevent paralysis, I do not know.

Now, I do recall in the South when I first started in public health work that I succeeded in getting a country-wide law passed that forced every dog to be vaccinated, and in three or four years we did not find a single case with a positive reading. And all the dogs that were not vaccinated were destroyed. Another thing I am watching very closely is to see whether epileptics who take the vaccine are improved. I am wondering if rabies vaccine will cure epilepsy.

Dr. Sharp: Do you refuse to allow the patient to take the vaccine?

Dr. Farrier: Here is what I said. I try to keep them from taking it and have the dog confined. If the dog bites an individual and we can't find the dog, I advise him to take the vaccine.

Dr. Sharp: In case the dog is found and the person has been severely bitten about the face or neck, would you still advise them to wait?

Dr. Farrier: Yes. I think the dog will die in four or five days anyway.

Dr. Sharp: We have had cases of rabies in Illinois in humans where treatment was instituted in three day's time and they died. We had deaths occurring as short as twenty days after the bite and they were given treatment and still went on and died. That's been our experience along this line. All of these were very severe bites about the face. These individuals may be severely bitten about the face by a rabid animal but they will not show symptoms until nine or ten days after the bite.

Dr. Ailes: The human died twenty days after the

bite and the treatment started three or four days after the bite?

Dr. Sharp: Yes.

Dr. Baxter: We had a girl who died thirteen days after a bite on the lip.

Dr. Sharp: We have had a number of patients that died in less than 20 days after being bitten. I don't have the exact figures.

Dr. R. M. Bissekumer, Rockford: As to the mode of transmission of the virus in the human, suppose you are bitten on the arm or the leg. Is that transferred by the blood stream or the lymph stream?

Dr. Sharp: We are under the impression that the virus travels along the nerve trunks to the brain and that the closer the bite is to the brain the shorter the incubation period. With a person bitten on the foot, the incubation period may well be sixty or eighty days. If bitten on the lip, where we have nerves extending directly to the brain, the incubation period may be as short as thirteen days as has been stated. So, for that reason we are particularly anxious to see that all severe bites and all bites near the brain are treated at once. If this patient could be treated for three, four, five or six days, and then the dog is determined to be rabid, we would have all that treatment in the patient.

Dr. Bissekumer: We had a case in Rockford. I think it was something like twenty-one days after he was bitten, and that was by his own pet dog, too. I don't know where he was bitten but death occurred in about twenty or twenty-one days following the dog bite.

Dr. Sandor Horwitz, Peoria: Did he get any treatment?

Dr. Bissekumer: Yes. Instead of being instituted in two or three days there was a delay. That was before we had free vaccine. And you had to have the supervisor sign the indigent papers. Instead of being sent directly to Springfield for the rabies vaccine this request went in to Chicago. There was a delay before Chicago sent it to Springfield. In all, it was about ten days after the rabies vaccine was sent for before it arrived. I think it was about six or seven days after the vaccine was instituted that the man died.

Dr. Horwitz: I recall a case where treatment was started three days after she was bitten and she took the course of treatment as prescribed by the State. Twenty-one days after the treatment was almost completed she developed rabies and died five days later.

Dr. Carl A. Peterson, Moline: A woman physician called me and informed me that a couple had been exposed to the saliva of a rabid bull, and wanted to know whether she should institute the antirabic treatment immediately. I asked her if she was certain the bull was rabid, and she stated that the veterinarian had seen the bull clinically and made a clinical diagnosis, and a consultant from the Department of Agriculture had seen this bull and he stated that the bull was rabid. So, I told her to use her judgment in that case, regarding whether there was any abrasion. She said, "How can I get this antirabic vaccine?" I told her to make contact directly with

Springfield by 'phone. She was anxious to get the vaccine immediately. Would it be advisable to go right on with the treatment?

Dr. Sharp: Yes. That bull was definitely rabid. So you should go ahead with your treatment because you have no means of knowing what lesions may be in the person's hands. I would like to say that the city of Decatur has a very effective dog ordinance which has been in effect for several years, and rather than discuss that ordinance I would suggest you write Dr. P. A. Steele, the health officer, and ask him for a copy of it.

EXCRETION UROGRAPHY

A Comparison with Retrograde Pyelography

ALFRED E. JONES, M.D., AND ROBERT A.
ARENS, M.D.

Urologist and Director Roentgen Department, Respectively
Michael Reese Hospital

CHICAGO

It is now ten years since excretion urography was presented as a useful means of diagnosis in the field of urinary tract pathology. During this period brilliant advances have been made both in technic of the procedure and in the development of more efficient contrast media that are able, with smaller doses, to produce clearer shadows without danger of toxic effects.

The early workers in this field had in view chiefly the finding of a means of intravenous urography that would be applicable in cases where retrograde pyelography was difficult or impossible of achievement. As the use of the new method spread, however, it became evident that a key had been found to problems wider than those of urology alone. It was realized that its use could be of untold value to internists and general surgeons, and also in the field of gynecology, since many obscure abdominal conditions could be recognized by this method, so simple of application and causing so little inconvenience and discomfort to the patient.

In the field of urology, excretion urography has more and more found a definite place for itself as a routine procedure. It is our aim, in this paper, to discuss frankly its merits and demerits in comparison with the older retrograde method. It is not a question of supplanting instrumental pyelography, which is here to stay, and which has its own secure advantages under

proper indications; it is a question of checking up the relative values of these two useful methods in particular instances and discovering the application of the one or the other.

There is no doubt, however, that excretion urography is being increasingly employed in cases where retrograde urography would formerly have been used, and that the simplicity of the procedure, its regard for the comfort of the patient and the relatively small expense entailed are arguments in favor of the newer method. The great appeal made by intravenous urography lies in its applicability to patients who, for any one of several reasons, cannot be subjected to ureteral catheterization. The obstacle may be mechanical, or it may lie in the patient's refusal to submit to the more painful instrumental procedure. There are intolerant bladders, bladders with diverticula, bladders with transplanted ureters or with ureteroceles, in which retrograde pyelography cannot be accomplished. There are infants and young children in whom the diminutive size of the urethra and ureters is prohibitive. There are urethral strictures and bladder neck obstructions that resist the passage of a catheter or cystoscope. Various deformities and anomalies may prevent the introduction of a catheter or cystoscope. In all cases, the superior appeal of excretion urography is evident. Likewise, in cases of infection, carrying it from the lower to the upper urinary tract by instrumentation is a danger not to be regarded lightly. Intravenous urography avoids this pitfall.

At the Michael Reese Hospital in Chicago we have become so convinced of the superiority of intravenous urography in a great number of urological conditions that the number of cystoscopies with retrograde urograms is now less than 50 per cent. of what it was in 1930.

It should be borne in mind that the information given by the retrograde method of urography is purely anatomic, while that obtained by the excretory method is physiologic as well as anatomic. Moreover, its findings are bilateral. Through it we gain knowledge of the functional activity of the upper urinary tract on both sides, as surely as we observe its topographical and anatomic relations. Braasch and Emmet have, in fact, reported, as the result of studies along this line, that in a series of 50 cases of various diseases of the urinary tract, in which both excretory

urography and differential functional tests with indigo carmine were used, the two in close agreement in 39, or 78 per cent. According to these workers, the time of appearance of the dye in the excretory urogram is a more important factor in establishing the amount and condition of remaining functioning renal tissue than in the actual degree of visualization. While this test is not infallible, the extent of its agreement with other functional tests is impressive, and taken in conjunction with the additional data on the presence or absence of anatomic deformity, it constitutes an additional, and a cogent, reason for the utilization of the excretory method. Even a poorly functioning kidney may, in a case of hydronephrosis, give a fairly good film at the end of 60 minutes, as the result of slow and gradual concentration.

As technic improves, the complaint that films are not so sharply defined by excretory urography as in the retrograde method is being heard less frequently. Intravenous urography has reached a high degree of efficiency and is today able to present films fully as sharp in their contour as those produced by the older method, in the hands of an expert. But it is necessary to remember that the physiologic movements of peristalsis are present in all normal pelves and ureters, and that any contrast substance introduced by way of the blood stream will participate in these movements, which extend from the tips of the calyces to the ureterovesical orifices. One should not, therefore, always expect to see a uniformly well filled upper urinary tract in the normal urogram, although if the right moment is caught this view may be captured. Seldom, however, is a normal ureter found completely filled. For proper interpretation of the intravenous urogram one must possess great familiarity with the wide variety of appearances of normal calyces, pelves and ureters. Sometimes a number of serial films must be studied and pieced together, so to speak, to obtain a picture adequate for diagnosis. Poor films may be due to insufficient filling, too rapid elimination, presence of gas in the intestine or to obesity of the patient. In the hands of an experienced roentgenologist these factors may not constitute any serious disadvantage. It is hardly necessary to state that there should be the closest possible cooperation between the urologist and the roentgenologist.

A careful preparation of the patient is also necessary for the obtaining of a good film. Many excretory urograms fail to bring out the details for no other reason than neglect of this factor. A scout film should be taken in every case before proceeding to the intravenous injection. This is done in order to show any faint shadows that may become obscured by the contrast medium. Where renal function is normal, the best shadow is likely to be obtained within five to ten minutes after the injection. But where function is poor, the maximum shadow has been known to appear as much as four hours after injection, notably in polycystic kidney. When serial films are made, care should be taken to examine each one before the next is taken, in order to get a proper idea of the time elements involved in the particular case. In interpreting the films there should be close correlation between clinical and urographic findings.

Careful selection of cases is necessary in order to avoid waste of time and material, for if there is not sufficient functioning renal tissue left to secrete the iodine injected intravenously, no shadow can be formed. It is obvious that poor visualization, or none at all, will be obtained in the poorly functioning kidney, since a certain degree of concentration of the iodine component is necessary for a roentgenographic image. Cases in which blood urea tests reveal a concentration of blood urea of 100 mg. per 100 cc. will, as a rule, give inadequate visualization in the intravenous urogram. Herein lies its principal disadvantage, for these considerations do not arise in the retrograde method, which forces the opaque substance into the ureters and pelves instrumentally. This very force, however, may result in ureteral spasm which causes deformities that vitiate the retrograde findings, whereas such spasm cannot occur when the excretory method is used.

Hydronephrosis. Subject to this proviso, that reasonably good function remains, it is generally agreed that the best visualization in the excretion urogram is obtained in cases of urinary stasis, where there is obstruction of the ureter such as occurs in hydronephrosis and hydro-ureter, congenital ureterectasis or ureteral regurgitation. In hydronephrosis, if secreting parenchyma is left, the entire sac is filled and its outline pictured. In large hydronephrotic sacs the retro-

grade method, as a rule, fails to fill the sac, through injection of insufficient contrast fluid; hence the visualization is incomplete, some of the calyces appearing and others not. Further advantages of the excretory urogram lie in the more accurate determination of the site of the obstruction, upon which the type of treatment must obviously depend, and in the fact that no infection is carried into the upper urinary tract when retained urine is present. The bilateral urograms thus obtained have revealed that hydronephrosis is more common than has been supposed. The nature of the lesion causing the obstruction cannot always be discovered by a retrograde pyelogram, since it is often possible for the contrast medium to stop at the level of the obstruction in the ureter, and give no evidence of what is above.

Lithiasis. Particularly impressive are the results of excretion urography in the field of *nephrolithiasis and ureteral stone*. Whenever a stone is suspected, an excretory urogram should be the routine procedure, precisely because of the urinary stasis which accompanies stone, and which lends itself so well to this mode of demonstration. Not only is the shadow visualized but it is also localized, and at the same time the comparative function of the two kidneys is obtained. These urograms are particularly satisfactory here, since radiolucent calculi that cannot be seen in a retrograde pyelogram appear in the excretory urogram as rarefactions in the intravenous medium. If a stone becomes impacted, totally blocking the ureter, it is clearly seen, because the dye reaches that point but descends no farther. This of course does not obtain if as often happens, there is a unilateral anuria. In most cases of lithiasis the shadows are clearer than in a retrograde urogram, and there is the additional advantage of avoiding infection and possible reaction.

Congenital anomalies are beautifully brought out in excretory urograms. Among those that lend themselves best to this mode of diagnosis are horseshoe kidney, double and ectopic ureters, unilateral fused kidney and congenital solitary kidney. Since the adoption of the excretory method, many duplications and other anomalies have been discovered that would otherwise have gone unnoticed. As these anomalies are peculiarly liable to develop pathologic changes, it is

of the greatest importance that they be brought to light by this simple method.

In *renal tuberculosis* the intravenous urograms are not always unequivocal in their verdict. In late cases, however, with advanced destruction of the kidney, the excretory urogram, taken in conjunction with the finding of the tubercle bacillus in the urine, may be decisive for diagnosis.

Traumatic injuries of the urinary tract are also very satisfactorily brought out. Among these are ruptured bladder, ureter and kidney. In some cases a torn kidney is secreting freely and the dye clearly delineates the extravasation. If one kidney is normal in the excretory urogram and the other not visualized there may be a torn pelvis with traumatized cortex and temporary unilateral anuria.

Where *renal tumor* is suspected, the excretory urogram can be relied on to reveal distortion or deformity of the calyces in tumors of the kidney parenchyma, or perirenal growths. Partial filling defects brought out in these urograms may appear erroneously in the retrograde urogram as a total filling defect. If the tumor prevents communication between the calyces and pelvis, or between the pelvis and ureter, secretion of the contrast medium will fill the cut-off calyces and pelvis, whereas injection from below will not carry the contrast fluid into the calyces and pelvis, and a total filling defect will result.

The excretory method is peculiarly adapted to differentiate a *retroperitoneal* from an *intrapertoneal tumor*, since it clearly brings to view the distortion that is invariably produced by the former, by reason of the smallness of the retroperitoneal space, which causes crowding and displacement.

Solitary cyst of the kidney is well revealed by the presence of a dense circular shadow, becoming sharper in outline in the later films of a series.

Other conditions in which excellent diagnostic results have been obtained, principally because of improved technic, include nephroptosis, in which the excursion of the kidney can be plainly seen; the physiologic pyelonephritis of pregnancy; pyuria in children; ureteral spasm; polycystic kidney, in which the shadow forms only slowly owing to defective function; vesical neoplasm, shown by a dense filling defect; prostatic obstruction, and many other minor pathologic

changes. The relation of ureters and kidneys to lesions within the bladder and prostatic urethra is better brought out than by retrograde pyelography, since catheterization is seldom possible if the ureteral orifices are not visualized.

Intravenous pyelography has also a diagnostic value in the differentiation of the function of the two kidneys in the same individual. A well-defined picture on one side, and the lack of outline of the kidney, pelvis and ureter on the other demonstrates loss of function in the kidney in which the contrast medium fails to appear. This differential functional test is absolutely indispensable if any operative procedure is contemplated.

In its ability to pick up contiguous pathological findings such as perirenal abscess and retroperitoneal tumors, excretory urography has likewise shown its great merit. For it is possible by this means to diagnose certain obscure abdominal conditions that are extrarenal; for example, the differentiation of abdominal masses, whether of intra or extra-urinary tract origin, has frequently been facilitated by this method of approach. In such cases one may hesitate to subject the patient to the retrograde procedure, whereas the simplicity of the excretory method makes it fully acceptable to him. And it is thus possible for a normal excretory urogram, by ruling out pathological manifestations in the urinary tract, to point the way toward the true cause of the symptoms elsewhere in the abdomen or pelvis.

But there are conditions under which the excretory method of urography will fail entirely. These are met chiefly in cases where the concentrating power of the renal parenchyma is not sufficient to excrete the dye. Obviously, then, a case of bilateral anuria will present a complete contraindication to excretory urography. Where actual or latent uremia is present as the result of functional incapacity, the procedure may likewise be worthless. In chronic parenchymatous renal disease with poor diuresis, and in advanced cases of chronic bilateral pyelonephritis, where the presence of purulent kidney infections have an inhibiting effect on excretion, no shadow is to be expected. Wherever there is renal and ureteral impairment of motor function, we may expect interference with the proper filling of the lumens, resulting in a corresponding distortion of intravenous urogram. So that it remains true that

in a considerable percentage of cases where involvement of the upper urinary tract is suggested by the symptoms, we still find the information obtained from the intravenous urogram inadequate and incomplete. Where there is temporary or permanent cortical renal damage of an extensive degree, good films cannot be looked for. It is for this reason that careful selection of cases is necessary before taking the excretory urogram, to avoid disappointment of both urologist and patient.

In addition, there are certain extrarenal conditions in which the procedure is contraindicated. Among these are certain cardiovascular conditions, including coronary disease, advanced myocarditis and decompensated heart lesions; liver insufficiency and cirrhosis; hyperthyroidism, pulmonary tuberculosis, allergic states and states of advanced hypertension. In none of these cases is it advisable to subject the patient to the tax imposed upon the circulation by the injection into the blood of an iodine compound in sufficient concentration to produce a roentgenographic shadow.

If these rules are followed, no untoward reaction need be looked for from the use of intravenous urography. A slight reaction consisting of a flushing of the face and a sense of warmth all over the body is usually experienced when the injection starts. This soon passes off and is without consequences, nor have any remote disadvantages been observed following the use of these contrast substances. Swick and von Lichtenberg have shown that 90 per cent. of the substance is excreted by normally functioning kidneys within four hours after injection, and most of it within the first two hours. In no case where function is below normal or where the dye is necessarily excreted more slowly, have we observed the slightest ill effects following its administration.

CONCLUSIONS

Summing up the advantages of the excretory method of urography, we may say that these are, chiefly:

1. Ease and simplicity of administration.
2. Avoidance of the discomforts and difficulties of cystoscopy.
3. Absence of danger of infection.
4. Demonstration of a large number of upper tract pathologic conditions, especially hydronephrosis and lithiasis.

5. Better shadows of filling defects.
6. Ability to reveal unsuspected anomalies.
7. Information afforded concerning physiologic function.
8. Diagnosis of contiguous abdominal changes with less discomfort to the patient.
9. Production of a bilateral shadow.

On the other hand, the disadvantages of the excretory method are:

1. Poor visualization when renal function is poor.
2. Too rapid elimination in normal or hypermotile kidneys.
3. Lack of detail in obese patients.
4. Interference by intestinal gas.
5. Greater experience needed for interpretation.
6. Danger of indiscriminate conclusions by incompetents.
7. The frequent necessity of checking by cystoscopic procedures.

Both excretory and retrograde urography have, accordingly, their advantages and their disadvantages—their merits and their demerits. It is not a question of one supplanting the other, but rather one of mutual supplementation, the one or the other method being found applicable in the individual case according to conditions. Both methods are indispensable in the modern practice of urology, and will remain so.

REFERENCES

- Swick, M.: Excretion urography with the use of iopax (uroselectan), *Oxford Loose Leaf Surgery*, 3: 746 (188-1A to 188-4A), 1935.
- Harrell, H. C., and Johnson, J. B.: Studies on intravenous pyelography, *Texas State J. Med.*, 33: 40-43, 1937.
- Reaves, J. U.: Evaluation of excretory urography, *South. Surg.*, 6: 15-19, 1937.
- Cumming, R. E.: Intravenous urography, *Radiology*, 18: 41-55, 1932.
- Cumming, R. E., and Chittenden, G. E.: Intravenous and retrograde urography; A comparative study, *J. A. M. A.* 106: 602-606, 1936.
- Braasch, W. F.: Intravenous urography, *Minn. Med.*, 14: 978-983, 1931.
- Braasch, W. F., and Emmett, J. L.: Excretory urography as a test of renal function, *J. Urol.*, 35: 630-642, 1936.
- Priestley, J. B.: Excretion urography, *Radiology*, 28: 559-564, 1937.
- Berger, R. A.: Increasing value of intravenous urography by improvements in technique, *Am. J. Roentgenol.*, 38: 156-161, 1937.
- Moore, T. D.: Excretion urography with neoskiodan, *J. Urol.*, 30: 27-37, 1933.
- Engel, W. J.: Urologic problems in childhood, *Radiology*, 24: 183-192, 1935.
- Rogers, J. W.: Diagnosis of spontaneous rupture of the kidney by means of intravenous urography, *J. Urol.*, 36: 105-110, 1936.
- Sweetser, T. H.: Management of kidney injuries; With special reference to intravenous pyelography, *Minn. Med.*, 18: 283-287, 1935.

Wesson, M. B.: Intravenous urography for the general practitioner, *Southern M. J.*, 28: 16-22, 1935.

Jones, A. E.: The possibilities of intravenous pyelography, *Urol. and Cutan. Rev.*, 34: No. 10, 1930.

Jones, A. E., and Arens, R. A.: Certain diagnostic phases of excretion urography, *Radiology*, 24: 169-176, 1935.

DISCUSSION

Dr. G. M. Landau, Chicago: When Dr. Arens presents a paper it is a very complete and thorough presentation, and it is rather difficult to discuss a paper as well written among radiologists.

I have learned one thing since the advent of excretory urography and that is to reserve my diagnosis of so-called moderate or even fairly well advanced hydronephrosis or hydro-ureter done by the retrograde method, because I think we have all learned that the majority of cases of so-called hydronephrosis were due to overdistention of the kidney or spasms which induction of the catheter produced.

Of course, Dr. Arens has the advantage over many of us in the smaller institutions where the general practitioner has just a faint idea of excretory urography. That is not said with any degree of criticism, but I do hope that many of our advocates of the method will read this paper and appreciate the fact that there must be preparation, that the scout film is absolutely essential, and that the shadows that we are going to be able to reveal by the excretory method are not going to be equally as clear as those by retrograde.

When one is dealing entirely with urologists they have a very good knowledge of excretory urography and what they may expect. I have found it necessary many times to sacrifice so-called determination of kidney function by using bladder compression to see if I might not fill out the kidneys to better advantage for those who are disappointed at the so-called poor fillings.

The matter of a scout film I think is absolutely imperative and to illustrate that importance let me cite one case that was referred in which the accompanying diagnosis along with the films was reported as a normal excretory urogram. The scout film revealed, however, the presence of numerous stones in both kidneys. On excretion urography it was difficult to determine whether these were all stones or whether there were stones at all so completely did the dye blend with these opaque shadows and it is not difficult to understand how even the experienced eye might have mistaken the kidney shadows as normal.

I thank Dr. Arens very much for the privilege of discussing his paper.

CALL THE UNION!

A little girl had been to church for the first time. When she returned home her mother asked her what she thought of church.

"I like it very much," she said, "but there was one thing I didn't think was fair."

"What was that, dear?" asked her mother.

"Why, one man did all the work and then another man came around and got all the money."—*Montreal Star*.

TECHNIC OF RADIUM TREATMENT OF RADIOSENSITIVE NEOPLASMS INVOLVING THE ANTERIOR VAGINAL WALL

FRANK E. SIMPSON, M. D.

Collaborators

J. ERNEST BREED, M. D.

JAMES S. THOMPSON, Ph. D.

CHICAGO

Carcinoma, the most common and important tumor involving the anterior vaginal wall and adjacent tissues, may be primary or secondary.

Primary carcinoma may arise in the urethra, Skene's gland, clitoris, anterior vaginal wall or in a urethral caruncle, extending sooner or later to adjacent structures and frequently metastasizing to the regional lymph nodes.

Secondary carcinoma may occur as a complication of fundal, cervical or vulvar cancer, arising from implantation, extension or lymph transference of tumor cells from the primary growth.

Biopsy is necessary for a positive diagnosis.

Technic. In intracavitary applications of radium to the anterior vaginal wall, difficulty has always been experienced in limiting its effects to the involved area because of the elasticity and close proximity of the posterior and lateral vaginal tissues.

Various technics have been employed.

1. Vaginal speculums with 3 or 4 blades have been used to expose the tumor, but are not satisfactory.

2. Vaginal "plugs" containing radium have been advocated. It is often impossible to introduce and keep in place a sufficiently large vaginal "plug" because of the pain from pressure on the tumor and the occasional partial atresia of the vagina due to the neoplasm.

3. Irradiation via the urethra with a hollow sound containing radium must be limited because of the danger of radiation injury to the urethra.

4. Irradiation from the cutaneous surface may injure the vulva or bladder.

5. The simplest method appears to be intracavitary surface irradiation of the anterior vaginal wall.

We have found the following technic satisfactory:

Preparation of Radon Applicator and Carrier.

A tightly rolled gauze bandage 2 cm. in diameter and 5 or more cm. long is used for holding the radon and may be called the radon "applicator."

To protect the lateral vaginal tissues, gold plates 2 to 4 mm. thick may be inserted in the sides of the applicator, provided there is sufficient room in the vagina.

A moderately flexible copper wire 30 or more cm. long and 4 mm. in diameter is attached to the applicator and serves as a "carrier," the long axis of the wire coinciding with the long axis of the applicator.

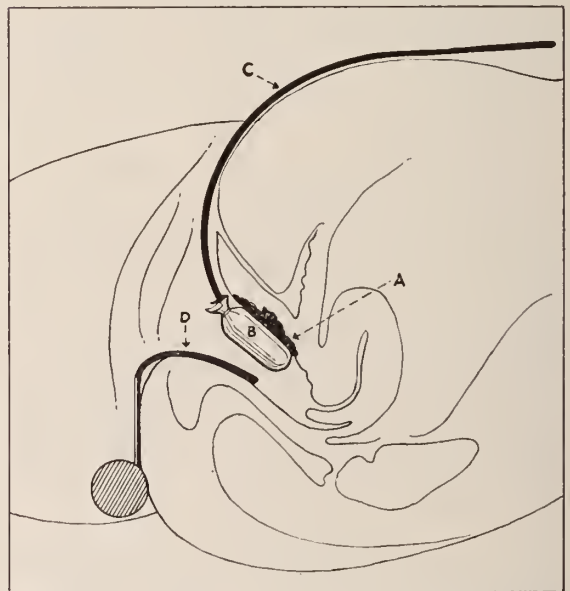


Figure 1. "Schematic drawing to illustrate method of applying radium to anterior vaginal wall."

A. Carcinoma of anterior vaginal wall.

B. Radon applicator.

C. Copper wire handle.

D. Weighted posterior speculum.

By making the proper curve in the copper wire, the radon applicator may be placed against the anterior vaginal wall and held in position by bringing the curved wire up over the pubes in the middle line toward the umbilicus.

The radon screens, inserted lengthwise in the center of the applicator, may thus be kept 1 cm. distant from the tumor and at an even greater distance from the lateral and posterior vaginal tissues.

Preparation of Patient. The patient lies on an examining table in the perineal position with her heels in the stirrups.

Two long antero-posterior gauze straps are

made to depend from the patient's shoulders.

A weighted, single bladed, posterior vaginal speculum is introduced into the vagina, the weighted part of the instrument hanging perpendicularly over the edge of the examining table.

A gold plate 2 to 4 mm. thick may be placed on the posterior blade of the speculum to protect further the posterior vaginal wall.

A bivalve speculum is introduced into the vagina anterior to the posterior speculum, the blades being inserted laterally and then expanded and held in position by means of the usual set screw attachment.

We use a bivalve speculum which has blades 12 cm. and 14 cm. long, respectively.

With this technic, the posterior vaginal wall is pulled down by the weight of the posterior speculum and the lateral vaginal tissues are kept widely separated.

All pressure is thus taken off the tumor, which is exposed anteriorly between the blades of the bivalve speculum.

Introduction of Radon Applicator. The tails of the gauze straps previously placed over the patient's shoulders are crossed at the front and back.

The two posterior tails are brought forward between the buttocks over the speculums and pinned to the two anterior tails lying on the patient's abdomen, thus holding the speculums securely in the vagina.

The radon applicator enclosed in a sterile finger cot is now introduced into the vagina and laid against the anterior vaginal wall, where it is securely held by the curved copper wire.

The free end of the copper wire lies flat on the patient's abdomen, where it may be secured with adhesive tape.

Dosage. In carcinoma, we place in the center of the radon applicator from 400 to 600 mc. screened with 0.5 mm. of silver plus 1 mm. of lead. With an applicator measuring 2 by 5 cm. a dosage of approximately 2000 to 3000 mc. hrs. may be given in a series of seances, each seance lasting about 15 or 20 minutes.

Treatments are given daily, on alternate days, or less often, depending on the indications.

The technic and dosage must of course be modified to suit the individual case.

Advantages. Some of the advantages of our method of applying radon to the anterior vaginal wall are:

1. As there is no pressure on the tumor from the radon applicator, treatments are painless and non-traumatic.

2. The posterior and lateral vaginal tissues are kept at a sufficient distance from the radon to prevent radiation injury.

3. The radon is held at an exact distance—1 cm.—from the neoplasm, a distance which we usually find desirable.

Radium "Puncture." The idea of implanting radium needles or "seeds" in a tumor involving the anterior vaginal wall is inviting.

One should carefully consider this method and its probable results before attempting it.

Some of the objections to radium "puncture" which we regard as contraindicated are:

1. The "puncture" method always gives rise to pain which may be intolerable in this situation.

2. One can seldom be sure of reaching with radium needles the more remote parts of a malignant tumor which is at all extensive. If one fails to irradiate adequately every part of the tumor, recurrence is inevitable.

3. There is danger of radiation injury to the urethra and adjacent structures.

4. Metastasis may be induced by radium "puncture" of a malignant tumor in this situation.

Metastasis. As long as the malignant neoplasm remains confined to its original focus and is not too extensive or deeply situated, a cure is possible in radiosensitive lesions.

Once it has metastasized, the prognosis must be extremely guarded. Graves¹ says: "Vaginal cancer metastasizes readily to the regional lymph glands, those in the upper two-thirds of the vagina taking the same path as the cervical cancers and those of the lower third taking the lymph route to the inguinal system of glands."

Treatment of Metastases. Surgical excision with pre- and post-operative irradiation is the method of choice.

If inoperable, lymph nodes may be treated by irradiation alone by means of the radium "bomb" or x-rays. Radium "puncture" is contra-indicated.

The prognosis of cancer with metastatic lesions is usually poor, although inguinal dissection, alone or combined with irradiation, has been successful in isolated cases.

BIBLIOGRAPHY

1. Graves, W. P.: Gynecology. 1929, Page 338.

THE CONTROL OF SYPHILIS AND GONORRHEA IN THE STATE OF ILLINOIS*

HERMAN M. SOLOWAY, M. D.

Venereal Disease Control Officer

SPRINGFIELD, ILLINOIS

The control program of syphilis and gonorrhea adopted by the Illinois State Health Department is based upon a public health problem of a communicable disease. The moral aspect and the sex behavior question has been entirely removed from the issue.

Educational Measures. Educational measures are being employed for *Public Information* by cooperating with churches, schools, clubs and societies, by furnishing them with literature, pamphlets, moving pictures and speakers on the subject of syphilis and gonorrhea. During the past year 307,952 pamphlets on venereal diseases have been sent out of this office. There were 275 showings of the moving picture entitled "For All Our Sakes" to an audience made up of over 25,000 men, women and young adults. These showings were sponsored under the auspices of over thirty women's clubs, nine churches, one hundred different types of clubs, meetings and societies, fifty-three C.C.C. camps, and thirty schools. The dissemination of venereal disease literature and information has been very enthusiastically received by the public and in some instances it stimulated the formation of local Venereal Disease Control Clubs. This department averages fifty letters and post-cards requesting venereal disease literature and sends out over 1,000 pamphlets daily.

Services Rendered to Physicians by this Department include laboratory facilities, free drugs, prescheduled treatment outlines, consultation services, follow-up of cases reported as having lapsed in treatment and special courses in venereal disease are to be given by the State University under competent teachers.

The *Laboratory Facilities* include the Wassermann and Kahn blood tests, darkfield examinations, smears and complement fixation for gonorrhea, and spinal fluid examinations. The free drugs furnished at the choice of physicians include neoarsphenamine, sulpharsphenamine,

silver arsphenamine, tryparsamide, bismuth and mercury preparations, acetarsone and sulfanilamide.

Prescheduled Treatment outlines which are based on the principles of treatment recommended by the Cooperative Clinical Group or approved by Venereal Disease Department of the University of Illinois are furnished to all physicians and include primary, secondary and early latent syphilis, late latent syphilis, congenital syphilis, syphilis in pregnant women, cardiovascular and neurosyphilis. Each of these treatment outlines contain heavy type notation that each patient must be treated as an INDIVIDUAL CASE and that substitution of any of the above drugs will be made at the attending physician's recommendation and selection. In this manner we are sure to make the doctor feel that he can use his own judgment in the care of each patient under his treatment and that this Department has no intention to regiment the treatment of luetic patients. Directions for the administration of sulfanilamide are also supplied.

Consultation Services are provided by every clinic and steps are being taken at the present time to provide an x-ray and electrocardiographic service in the larger clinics. Discussion of cases are encouraged and advice on treatment is a daily service rendered to physicians.

A *Monthly Check-Up* letter containing a list of the drugs for the next five-weeks' treatment of each patient listed in our records as being under the physician's care is sent to every doctor for his "O.K." check or he may substitute his own choice of drugs. If any patient has interrupted his or her regular treatment schedule, the physician fills in the "Discontinued Treatment Notice" also included as part of this so-called "drug letter" and a field representative or a public health officer will contact the case and every effort will be made to return delinquent patients back to the doctor for further treatment.

This procedure is our method of *Case Control* and we can highly recommend it for general use as we find that if the public health officer or a field representative will approach these delinquent patients in an understanding and courteous manner, handling each situation tactfully, he can nearly always make the patient realize how vitally important it is to his future welfare to continue treatment. We have never found

Read at the Illinois Health Officers' Conference, December, 1938.

*From Illinois Department of Public Health, Doctor A. C. Baxter, Director.

it necessary to use the police in these follow-up problems although it was necessary to threaten reluctant patients on several occasions.

From July first to November the twentieth we have made 3,748 investigations of discontinued treatment cases and succeeded in returning 1,443 patients or (38.5%) back to the doctors who originally reported the cases, and 581 patients or (15%) were returned to other doctors selected by the patient, a combined total of 2,024 or 53.5% who returned to continue treatment. Of the remaining 1,724 investigated cases, about 150 cases left the state, 50 cases were reported as cured, 400 cases were reported to the Health Departments of the larger cities in the state, and the rest of the cases, numbering 1,124 or about 30% of the total number of cases, could not be located. These include patients who left the state, cases reported under fictitious names, transient workers in the harvest or oil fields, and visitors of the state.

We have also established *Reciprocal Relationship* with all full time health officers of inter-urban cities as well as interstate venereal disease control officers. During the past year over 180 letters were sent to these out of state officials notifying them of the name and address of luetic patients or of suspected sources of infection, and 400 such notifications were sent to other city health departments in Illinois.

Cooperation has been established and successfully carried on with the Department of Maternity Welfare, Infant Welfare and Dental Hygiene. All cases of syphilis in pregnant women and congenital syphilis are reported to the first two mentioned departments and they furnish visiting nurses to indigent cases. The dentists and nurses of the Dental Hygiene Department are instructed to look for suspicious lesions of the mouth and notched teeth.

CLINICS

The Department of Health of Illinois has established eleven venereal disease clinics throughout the state, outside of Chicago, for the treatment of indigent patients. Each clinic is under the supervision of a full time clinician who has had special training in the diagnosis, treatment and management of these diseases. Several part time assistant clinicians are employed in the larger clinics as well as public health nurses and social workers. These clinics offer consultation services to every physician.

It is not the policy of this Department to recommend the establishment of free clinics in any community unless all other methods for providing the proper treatment of indigent patients have failed or have been proven hopelessly inadequate.

PROPHYLAXIS

In addition to the prophylaxis of gonococcal ophthalmia neonatorum provided for by the law, this Department is most highly in favor of and recommends prophylactic measures in the prevention of venereal diseases. This problem is only considered from a health angle and we are averse to consider prophylaxis from a moral or birth control viewpoint. It is an integral part of our venereal disease control program. We must concede that there is great value in the properly applied medical prophylaxis in the prevention of infection. The use of a mechanical device that prevents actual contact is the most efficient medical measure. We must admit that prophylaxis by the use of cleansing and chemical agents before and after exposure, when early and properly applied, has proven to be of great value. However, its promiscuous use may foster the spread of venereal diseases rather than reduce them.

EPIDEMIOLOGY

We fully appreciate that the success of campaign for the control of gonorrhea and syphilis depends in a very large measure upon the careful tracing of every infection to its original source and the investigation of every person whom the patient might have exposed.

There is no question but that the tracing of the source of infection is a very difficult and offensive procedure to most public health officers. However, unless they proceed on this mission only from a public health viewpoint without any thought or consideration of the moral question involved, we are doomed to fail in our efforts. The health officer, nurse, and social worker or anyone else associated with the health department who considers it below his or her dignity to contact these sources of infection and to investigate the subsequent exposures must be considered as detrimental to the control of venereal disease programs and their services should be directed to other public health measures and not to venereal disease work.

The ideal public health officer must be a

broad-minded, sympathetic individual with appreciation and understanding of the unfortunate indigent patient's condition. By employing tact and diplomacy in gaining their confidence and assuring them that their identity will not be revealed, their cooperation can nearly always be obtained, which would result in contacting the original source of infection. This entire investigation must be carried out with the knowledge and approval of the physician reporting the case, otherwise he will refuse to report cases to the health department. Some physicians will not permit an investigator to contact his patient but often will supply the necessary information of the source and subsequent exposures which he obtained from the patient. We must never lose sight of and respect for the patient-physician relationship. However, our experience for the past six months in these investigations has not been too encouraging. Since July 1st this Department has routinely assigned an investigation of all reported cases of primary and secondary syphilis and of all acute gonorrheal cases. There were 1,337 such investigations made and although the actual results have not been evaluated we are inclined to believe that there is room for much improvement on this phase of epidemiology. It seems that the greatest resistance which we have met was the lack of cooperation from the attending physician, who is either reluctant to reveal the identity of his patient or fearful of losing his patronage. The greatest problem for the control of gonorrhea and syphilis from the standpoint of a communicable disease is to overcome this prejudice of the private physician and permit the health officer to contact their patients, regardless of social or economical standing.

In spite of this discouraging attitude of these physicians a very promising feature has gradually developed in the last few months which gives this Department great hope that it is on the right track. Doctors are reporting their cases under the real name of the patients in nearly 90% of the cases. In the past less than 10% of the cases were reported by name, either initials or code or key numbers were used. We can only account for this change of attitude on the physician's part as an expression of their interest in our control program for the eradication of gonorrhea and syphilis, and that our efforts are beginning to show results.

Case Finding can be successfully carried out by the so-called "high index of suspicion" of infection. The medical profession must be trained on all phases of syphilis and gonorrhea and to look for these diseases regardless of social or economic status of their patients. They must be able to make an early diagnosis of these conditions and to keep under adequate observation those who have been exposed.

Epidemiologic investigation, with a known case as the starting point, will often bring to light many cases of infection if the source and subsequent exposures are immediately contacted and thoroughly investigated. One of our field representatives was able to dig up thirty-two proven cases of syphilis by a diligent and persistent investigation of ONE source of infection.

Another method of case finding consists of routine blood and smear tests in premarital health examinations as required by the law in this state. Routine blood serology should be done on all hospital cases and on all patients of out-patient departments of clinics regardless of the medical condition for which they are receiving treatment.

The prevention of congenital syphilis depends upon the detection of syphilis in the pregnant women by routine blood serology and the immediate institution of antiluetic treatment.

LEGISLATIVE MEASURES

Legislative measures are necessary to aid the Department of Health in the control of venereal diseases. The present laws making it compulsory to report venereal disease cases should be more rigidly enforced. New laws should be passed giving the health department more leeway in the control of gonorrhea and syphilis among the inmates of houses of prostitution. Better legal control should be made of the charlatan or so-called "quack" doctor; of dispensing druggists, and of manufacturers of "sure and quick cure" medicine by passing and enforcing new laws.

In conclusion I wish to say that for the first time in the history of public health, measures have been made available to us for the control of venereal diseases. We must take advantage of this opportunity by combining all our efforts to gradually formulate definite plans and procedures based on the well founded principles of the control and suppression of a public health menace. We must assume the responsibility to educate

the doctor and nurse, the general public and all public health officers and workers of the means and methods of diagnosing and reporting venereal diseases early, so that treatment may promptly be instituted, and public health measures carried out to discover the source and to investigate the exposures of the infections. We must make the necessary arrangements for the treatment of all indigent patients.

The realization of the suppression and control of gonorrhea and syphilis can only be obtained by the practical application and fulfillment of the above public health measures.

3001½ S. Second Street.

MODERN CHANGES IN PLASTIC AND RECONSTRUCTIVE SURGERY OF THE FACE AND NECK

M. REESE GUTTMAN, B.S.; M.D.; F.A.C.S.

CHICAGO

There is an acknowledged change in the attitude of the profession as well as the lay world at large, towards the practice of plastic surgery. It is not so long ago that this phase of surgery was but the privileged playground of the advertising quack. In fact, indulgence in plastic surgery, especially in the esthetic procedures, not infrequently laid a surgeon open to suspicion at the hands of his colleagues and many an operating room was closed to so-called "Beauty operations." The increasing number of deformities resulting from modern industrial hazards, associated with the regretful toll of the automobile highway, has placed greater demands for plastic and reparative procedures.

A better appreciation of the mental trauma associated with facial deformity has led to a more profound understanding of the resulting psychoneurosis and feeling of inadequacy so commonly exhibited by many individuals with featural defects, no matter how insignificant the deformity may be to the objective observer. In consequence thereof there has been a definite reversal of attitude towards the performance of esthetic operations, which may be necessary not only for the psychic but also for the social as well

as economic rehabilitation of the patient. It follows that one of the basic changes is the broadening of the indications for plastic surgery to include not only those gross deformities of congenital, traumatic or pathologic origin, but also to include smaller and at times minor defects that are associated with definite evidence of mental reaction that is of psychiatric, social or economic import. One must however be extremely cautious in indicating surgical intervention in an individual with a minor defect who evidences marked psychic disturbance. It is imperative in such unfortunates to secure a careful psychologic appraisal of the patient in order that the surgeon be prevented from supplying a new focus of obsession, which may prove to be trying to the surgeon and patient alike. In fact, it might be well to refuse the correction of insignificant defects unless there is a good motive underlying the request and thus avoid subsequent regret.

The nose, due to its prominent position, presents in all probability, the most common site for plastic and reconstructive surgery about the face. In the past little attention was paid to the so-called "artistic criteria" of the nose. Humps were removed, long noses shortened, and other corrections made with no definite aids to determine a pleasing end-result. It is essential, however, to consider the relative measurements of the nose and its relation to the face in order to obtain an artistic appearance. The most important elements to be borne in mind consist of the length of the nose in relation to the chin-nasal length; the angle of the basal bridge to the face and the angle of the columella to the face. A study of acknowledged beautiful noses in the realm of art as well as in practice has shown that the length of the nose, measured from the root of the dorsum to the tip should equal or be slightly less than the length of a line drawn from the tip of the chin to the root of the columella. Further, the angle that the dorsum forms with an extension of the chin-columella line to the root of the nose should be between 27° and 35°. When the angle of elevation of the dorsum is more than 35° an abnormal protrusion results and if less than 27° an unpleasant retraction or flatness is apparent. Finally, the angle which the columella makes with the lip, should be between 90° and

105°. Masculine noses appear best at the right angle and feminine noses look better as they approach the 105° angle. Photometric instruments have been devised by Joseph, Straith, Safian, and others that aid in the appraisal of the naso-facial relations and measurements. During the correction of over-sized, humped or long noses, sufficient bone and septal cartilage must be removed from the dorsum and cartilage resected from the septal edge to secure these ideal measurements.

The angle of elevation of the dorsum is below the normal profile line in some portion or other in "saddle nose" deformity consequent to lues, fracture, septal abscess, or excess cartilage resection during septal resection. Photometric study will reveal a depression of either the tip or the cartilaginous or bony dorsum or any or total combination of these. The loss of sustaining structures is remedied by the subcutaneous elevation of the dorsal skin and the implantation of some rigid material for support. The use of foreign bodies such as celluloid and ivory are becoming increasingly more rare, due to the well known temporary tolerance of tissues for alien material. Bone implants have a tendency to undergo atrophy, and in consequence cartilage derived from the ribs, septum or ear is the material of choice. In the event that the patient refuses to supply the material from his own body, one may utilize preserved cartilage, removed during septal resection or from fresh cadavers. This real innovation of Straith, permits us to obtain this material and keep a stock supply in a solution of merthiolate in a refrigerator. Undoubtedly absorption of the bone and cartilage implants are due in no small degree to the pressure of the undistended overlying soft tissues and the constant pull of the small paranasal musculature. This tendency may be overcome by employing the procedure suggested by Burian, of temporarily inserting ivory for a period of a year and then substituting the cartilage. Not infrequently, however, patients object to the dual procedure.

Defects of the skin about the nose, following trauma may be repaired by using small Wolfe grafts. If the loss occupies the entire ala, a flap may be necessary. Formerly but little attention was paid to the color and texture of the

graft. In consequence a marked contrast between the graft and the surrounding skin was not infrequently obtained. Today this is obviated by rotating or sliding the skin from the immediate area of the defect, or from some area that has had a similar exposure to the sun and elements. Wolfe grafts may be obtained from the upper eyelid, or a pedicled graft from the forehead may be necessary where there is a total loss of the ala. In total loss of the nose consequent to trauma or disease large flaps may be taken from the forehead, arm or the abdomen. In the past tissue derived from the abdomen was made to travel upward to the facial area by several steps at intervals of several weeks. Nowadays, flaps originating in the abdomen are transferred first to the arm, and then directly to the facial area, thus saving time as well as several operative seances.

The management of nasal fractures is a most important phase of rhinoplasty, due to the increasing automobile, industrial and sport hazards. A careful investigation of the several structures making up the nasal architecture must be instituted at the time of the original treatment. Care must be taken to repose the structures in order to obtain as little external deformity as possible. In addition one must give painstaking attention to the interior of the nose in order to secure and maintain a patent airway on both sides. Old unreduced, or poorly reduced fractures, may require in addition to septal correction for obstructions, the repair of deviations from the midline, removal of humps and exostoses and elevations of depressions.

The repair of congenital hare lip must have, as its objective, the restoration of anatomical parts to their proper position in order that normal growth and development may eventuate. The lip, after proper paring, must be carefully united, layer by layer. There must be an accurate even muco-cutaneous junction, so that both sides of the lip are even. Care must be taken about the nostril so that no obliquity results. The muscle fibers must be accurately approximated in order to obviate grooving of the skin surface and also to aid in obtaining a proper thickness at the site of union.

Postauricular fistulae are relatively seldom

met with today, but they still occur. For the most part they are due to excessively prolonged packing of the mastoid wound and are often associated with a marked depression of the mastoid terrain. They are best closed by utilizing a large posterior flap, split in two layers. The deeper layer aids in filling in the bony depression and acts as a firm base for the healing of the external dermal layer.

In the past there has been a great deal of effort expended in the construction of ears for congenital absence or microtia. The results are almost uniformly disappointing, merely substituting monstrosity for deformity. Gilles and Naftzinger have reported on the use of maternal ear cartilage as a means of support, which may assist in obtaining more pleasing results. Not having the opportunity of trying their technique, one must still advise the removal of the auricular appendage and the wearing of a plastic rubber prosthesis. Protruding ears were unsuccessfully repaired in the past because the role of the spring like action of the cartilage was not appreciated sufficiently. If the ears were sutured to the side of the head after the removal of the skin at the site of apposition, a recurrence of the protrusion would manifest itself sooner or later due to the constant tension of the cartilage and the subsequent stretching of the postauricular skin. Today the spring like action of the auricular cartilage is broken by exercising a sickle or crescent shaped piece of cartilage prior to suturing the ear to the side of the head. The site of the excision not only releases the tension due to the auricle, but also forms the ridge of the anti-helix which is absent in these ears. While there are many other varieties of defects about the face that come to the attention of the otolaryngologist, the preceding described abnormalities are most common and lend themselves most readily to correction with techniques that are not overly difficult and which are within the ability of the average operator in our field; that is, however, providing one has secured the detailed added knowledge that is so essential for the successful outcome of plastic procedure.

30 N. Michigan Ave.

A NEW MANAGEMENT FOR THE RELIEF OF ANGINA PECTORIS AND CORONARY DISEASE

OSCAR A. STRAUSS, M. D.

CHICAGO

This study is presented following observation and treatment of approximately 110 patients over a period of more than eight years. The therapy proposed, injections of a 10 cc. solution containing 0.2 per cent. of an isotonic colloidal iodine with 1/150 grain of hydrastinine and the equivalent of 7 grains of sodium cacodylate, apparently has a beneficial effect by restoring the cardiac reserve and causing a favorable response of the endothelial cells, especially in the coronary vessels. It is believed that, though the pathological change in angina pectoris and coronary disease is understood, the heart has been given too much consideration as the source of trouble. Treatment has been directed toward relief of immediate symptoms, rather than toward correction of the congestion of the intima of the coronary arteries which obviously must affect the entire vascular system. With the idea of reducing the fibrinous inflammation of the endothelium, especially of the coronary vessels, it was felt that the logical approach would be by way of the blood stream, using medication which would be non-irritating to the tissues. Colloidal iodine has been found to be the simplest and purest form of iodine in solution without the addition of alcohol or side salts. The addition of the isotonic vehicle produces a satisfactory solution to carry the medication to the affected tissues. No iodism has been noted in this series. The glandular stimulation produced by iodine apparently contributes to the regenerative powers of the blood vessels, as manifested in toxic goiter and acute and chronic infections causing vascular changes, and their response to iodine. Hydrastinine, the active principle of hydrastis, has a definite effect in reducing fibrinous inflammation. It improves the tone of flabby tissue, is cumulative in its action, and has a favorable effect on hypertension. Sodium cacodylate is especially valuable for its effect on low-grade infections, and more particularly on irremovable foci. It is best known for its hematinic effect, therefore tends to relieve the fatigue so commonly an associate factor in the cause of coronary stasis.

When the doctor told McTavish that his wife's tonsils should have been removed when she was a little girl, he sent the bill to his father-in-law.

When this solution is used no irritation and no inflammatory reactions have been noted, even if the tissues around the vein are infiltrated; when given intra-gluteally, no local reaction occurs other than pressure discomfort. Following the first injection an easing in the chest constriction and a sense of tranquillity is usually noted by the patient. The chest constriction appears to grow less following subsequent injections, with consequent improvement of the effort syndrome. The objective symptoms subside more slowly. Arrhythmia, when present, becomes more nearly normal; cyanosis and characteristic pallor recede; and the patient gradually acquires the ability to resume his normal habits.

In the care of these patients, essential facts in the history are of importance. A history of tonsillitis, scarlet fever or diphtheria, and particularly of rheumatic fever, calls attention to the type of cardiac involvement present. A positive venereal history demands investigation. The story of repeated miscarriages arouses the suspicion of syphilis. All foci of potential infection should be sought and, if necessary, eradicated. A retroflexed or anteфлекed uterus can contribute toward a coronary spasm. An enlarged prostate causing retention, aside from its sympathetic nervous disturbance, may contribute to coronary irritation. During the past two years it has been found that the administration of sex hormones in addition to the injections, has aided the response in women in the menopause and men with prostatic enlargement.

A simple diet, avoidance of highly seasoned foods and those which tend to cause digestive upsets, should be prescribed. Alcohol is not recommended, although some patients apparently are not harmed by its use. Large amounts of coffee and the excessive use of tobacco seem to be more provocative of an attack than a moderate indulgence in alcohol. Hydrotherapy and massage have been found beneficial, and graduated exercise as the physical condition of the patient permits.

The course of treatment is administered as follows: Injections are given in the more serious cases every other day for six days, then semi-weekly for ten injections and weekly for the balance of the course of twenty injections. In more advanced cases, a second course should be given, one injection weekly. In mild cases an injection

semi-weekly for six injections and then one weekly for the balance of the course of twenty is usually satisfactory. In the presence of hypertension, the injections should be continued at the rate of one a week until the pressure is within normal limits. The patient should return every three months for observation during the first year following a course of treatment. The importance of regular habits and emotional control should be impressed upon him, and his cooperation obtained.

All other forms of medication should be discontinued while the patient is under this therapy, especially digitalis or strychnine and any form of cathartic that may contain a stimulant or phenolphthalein. The bowels may be regulated by bile salts or other cholagogues, compound mixture of hydrastis, cascara, fruits and fruit juices.

Most of the patients in this series had been treated over varying periods of time by other methods, with increasingly greater discomfort. The ages ranged from 32 to 90. Many had complications such as hypertensive cardiorenal syndrome, thyrotoxic heart, syphilitic carditis and aortitis, chronic rheumatic heart disease, and heart block. All showed improvement under this treatment, which became more noticeable as time went on, the degree of improvement depending upon the severity of the condition and the cooperation of the patient. Some have had complete relief for a period of over five years; in others, the subjective symptoms returned only after great emotional stress or over-indulgence. when a course of from four to six injections would again bring about a symptom-free period.

Following the first course of twenty injections, the patient is instructed to return immediately should effort syndrome, pain, or constriction of the chest recur. In this series, 38 per cent required a second course of injections, usually once a week for a varying period of time depending upon the hypertension and other complications. Fifteen per cent. had edema which responded in varying degree, the fluctuations apparently being due to the age, the amount of exertion, and the emotional pressure. One patient had a definite phobia for all forms of hypodermic medication and had to be treated symptomatically, with temporary results.

In this group of 110 cases there have been six

deaths. One patient, aged 73, had an essential hypertension; blood pressure 240/130. He had been under treatment for five years with stimulants and sedatives until his vision became seriously impaired. After sixteen injections all symptoms disappeared and his blood pressure was 158/90. He died as a result of over-indulgence in pork shanks, sauerkraut and beer, when facing a possible bankruptcy the following morning.

A second patient, aged 36, had malignant hypertension with considerable heart, liver and kidney damage; 4 plus albuminuria; and was an alcoholic with some drug addiction. The response to treatment was satisfactory; the blood pressure was reduced from 250/140 to 180/100, and the patient was able to be up and about for the first time in three years. Following over-indulgence in eating and drinking, he developed a cerebral hemorrhage and died several weeks later.

The other four patients had no symptoms of cardiac, liver, or kidney changes. The ages ranged from 40 to 80. All were examined regularly with x-ray and cardiograph one to four times a year. One, a physician 40 years of age, had very temperate living habits except that he smoked about a package of cigarettes a day. He cut this amount to less than half, and finally stopped the use of tobacco entirely. After three injections the chest constriction, vomiting, pain and effort syndrome disappeared for six months. During the winter the symptoms gradually returned, and he resorted to sedatives and occasional heart stimulants. He was satisfied that it was not a coronary condition and, to prove this, applied for life insurance and was accepted. His physician prescribed sedatives for emotional instability, and the patient died of coronary thrombosis about a year after having had the last of three injections.

Two of this group were men of about 45 years of age. Both had had repeated attacks of angina pectoris, were disturbed over economic conditions and had a tendency to brood over their misfortunes. They were treated first with sedatives, then with injections. One died one year after receiving eight injections. He had been satisfied with the improvement in the condition and thought it unnecessary to continue treatment. The second died three months after receiving the last of fourteen injections. He had had

much emotional unrest and would not continue treatment.

A man 80 years of age, a widower, unusually robust and strong, had had four electrocardiographic and x-ray examinations. All were negative as to pathological manifestations in the heart; no kidney or liver damage was apparent. He had been unusually active in business and social life, and apparently had at least ten years more to live. He had had syphilis for more than fifty years and was treated more or less constantly for this during the twenty years preceding his death. Coronary symptoms appeared about five years ago with slight elevation in blood pressure. The symptoms were controlled by means of injections. The patient declined to restrict his activities or to sleep more than six hours a night. While under the care of another physician, while travelling, he was placed at bed rest and given large doses of digitalis and sedatives. Death occurred three weeks later.

Typical of the series are the following case reports:

Case 1., A. H., a woman 55 years of age, first seen in 1928, had a blood pressure of 210/110, pulse 80. She had a decided effort syndrome and was unable to drive an automobile or climb stairs. She had been taking digitalis intermittently for three years. There were no pathological findings in the liver, kidney or heart.

Digitalis was discontinued and injections of a solution similar to the one herein described were given, with improvement. Two years later it was necessary to resume treatment and she was given thirty injections at intervals of a week, of the solution now being used. She was able to resume her former mode of life, drove her own automobile and even indulged in airplane travel. Her blood pressure was reduced to 140/90. Four years ago she developed a carcinoma of the left breast, which was amputated, following which radium therapy was administered. She has had no heart symptoms since the attack eight years ago.

Case 2. M. C., a man 60 years of age, weight 220 pounds, height 6 feet 1 inch, had a blood pressure of 220/100, pulse 70. He was a man of sedentary habits, a heavy smoker, moderate in diet and the use of alcoholics. When first seen in 1930, he complained of effort syndrome, constriction of the chest, and precordial pain. He received one injection weekly over a period of twenty weeks, and was symptom free until six months ago, when he had a return of the effort syndrome. At this time he had a long-standing ulceration of the nose, which proved to be syphilitic. Wassermann test eight years ago was negative. A provocative injection brought about a 2 plus positive Wassermann reaction. Under treatment with bismuth and neosalvarsan the ulceration of the nose cleared

up, but the dyspnea and effort syndrome were aggravated by neosalvarsan and it had to be discontinued. A second course of colloidal iodine and hydrastinine cacodylate resulted in improvement.

Case 3. M. C., a man 40 years of age, formerly an all-star football player of unusual muscular development, had a blood pressure of 140/90, weighed 220 pounds, and was 5 feet 11 inches in height. When seen in 1933 he presented a characteristic pallor and dyspnea, complained of effort syndrome and pronounced precordial pain; no nausea or vomiting. The effort syndrome was so pronounced that he was unable to drive his car. He received one injection a week for forty weeks, since which time he has been symptom free. His blood pressure remains the same.

Case 4. M. K., a woman aged 68, had a blood pressure of 170/100, pulse 68, and when seen in 1930 had edema of both legs. She had been unable to continue her work as a seamstress. During the previous year she had had several falls, in one of which she broke her arm, in another, her leg. There was complaint of constriction of the chest, precordial pain, and dyspnea. Since receiving one injection weekly for thirty weeks, she has had no recurrent attacks, has not fallen, and has been following her vocation to this date. The blood pressure is now 148/90.

Case 5. C. A., a woman 50 years of age, first seen in 1929, gave a history of several miscarriages. Her husband died of cerebral hemorrhage; one daughter died at the age of 14 of sarcoma of the ovary. Repeated Wassermann tests made on both the patient and her husband had been negative. Her blood pressure was 100/70, pulse 90. She had decided pallor and cyanosis, dyspnea, precordial pain and anorexia. Urinalysis showed 1 plus albumin. The red cell count was 2,800,000; hemoglobin 60 per cent. Weekly injections were given for a period of forty weeks. Her condition improved so that at the end of the year her blood count showed more than 4,000,000 red cells and hemoglobin of 85 per cent. She is now entirely symptom free, is doing more work with less fatigue than she did ten years ago. The blood pressure is now 130/85.

Case 6. M. S., a woman 47 years of age, married, with three children, had a blood pressure of 120/85, which never varied, pulse 80. No pathologic lesions in the liver, kidney or heart were evident on repeated x-ray and cardiographic examinations. The blood picture was normal. The Wassermann reaction was negative. Blood sugar 70 mgm. per 100 cc.; creatinin, non-protein nitrogen and uric acid all within normal limits. There was no history of past illness. She developed severe angina pectoris symptoms, constriction of the chest, and serious dyspnea. She was placed at bed rest for two months and treated for hypoglycemia with sugar, sedatives, massage and stimulants, with no improvement. She complained of spastic pain from the chest down the entire left side into the left hip. She smoked more than a package of cigarettes a day and drank six cups of coffee.

Starting with the third month, injections were given, one every other day. Immediate improvement followed

and she was up and about after the sixth injection and had fifteen injections without recurrence of symptoms. After a very serious emotional strain and over-indulgence in cigarettes and coffee, it was necessary to give several injections to bring about a normal condition. This has happened twice in the four years following the first course of treatment. She has lost entirely the severe and acute symptoms, and has repeatedly driven a car five and six hundred miles a day without any sign of recurrence.

Case 7. G. S., a man aged 41 of very emotional type and an unusually hard worker, was first seen in 1933, with a blood pressure of 140/90, pulse 80. This man consumed more than a quart of whiskey every twelve hours and smoked about three packages of cigarettes daily. He had had repeated attacks of anginal pain, which at first were relieved by sedatives, but later required opiates to control. He had nausea and vomiting, decided pallor and dyspnea, and painful constriction of the chest. For the first two weeks of treatment he was given an injection every other day. He refused to stop work, or to give up the use of cigarettes or alcohol. In spite of his intemperate habits he made a complete recovery following thirty injections and has had no recurrence of attacks. His blood pressure is 130/80.

CONCLUSIONS

1. A new management for the sustained improvement of angina pectoris and coronary disease is presented.

2. No sedatives or heart stimulants are employed in this treatment.

3. Improvement is brought about by the restored and improved circulation of the intima, particularly of the coronary vessels.

4. It is believed that the cardiac reserve created with the therapeutic agents here suggested produces a more enduring relief, and with each treatment greater security.

5. The treatment apparently has a sustained, favorable effect on hypertension, as well as on other symptoms of circulatory or angitic pains in other parts of the body.

6. The fact that immediate and sustained improvement has been obtained in a series of 110 cases, some of whom have been observed over a period of eight years, would seem to justify the use of this remedy.

30 North Michigan Avenue

Excited Patient: "Let me up—I want to get out of here!"

Nurse: "Lie down and be quiet. The doctor is a very excitable man and loses his patience easily."

Patient: "So I heard and that's why I want to get away."—*Health Digest*.

HALF A MILLION DEATHS FROM APPENDICITIS

ARNOLD S. JACKSON, M. D.
JACKSON CLINIC,
MADISON, WISCONSIN

The title "Half a Million Deaths from Appendicitis" may sound unusual—even sensational—but perhaps we need something sensational to jar us into the realization that this terrible toll of human life has occurred in the United States in the past thirty years. In spite of the great developments in the fields of medicine, surgery, and anesthesia during these three decades, there has been no decrease in the death rate for appendicitis. According to the Bureau of Vital Statistics, the death rate for 100,000 from this disease during the past decade exceeded that of the first ten years of this century. Every hour during the year 1939, approximately two persons will die from appendicitis in this country. Twenty thousand of these persons will die at an average age of twenty-seven years. Approximately 300,000 persons will be operated on for acute appendicitis of whom 42,000 will have spreading peritonitis; more than 15,000, or one in every three, will die.¹ The mortality will be less than one per cent. for persons on whom appendectomy is performed before perforation has occurred.

It is obvious that if the death rate for this disease is to decrease rather than increase, the number of cases allowed to rupture must be diminished, and the surgical treatment of perforated cases must be improved. Prevention of perforation can be accomplished most expediently by lay education not only of the parents but the children as well. They must be taught that the three P's—purgatives, perforation and peritonitis, are just as important as the three R's. Unfortunately many adults and even some physicians do not realize the danger of prescribing a dose of castor oil or salts for a pain in the abdomen.

If all cases of suspected appendicitis were hospitalized, a lowering of the death rate would occur because few cases would be allowed to go on and perforate. Consultation, laboratory studies, accurate records, and frequent observation diminish the chance for rupture to occur in a hospital. Now that the distance and time

factors in this country are reduced by new and better highways, speedier transit and more hospitals, delay should be reduced. Cases should come to operation earlier. Under spinal anesthesia even the doubtful cases may be explored with little added risk to the patient and so the not infrequent retrocecal or pelvic "hidden snake variety" of the silent gangrenous appendicitis may not be overlooked.

In spite of everything that can be done to decrease the number of cases going on to perforation, this problem must be faced continually. If perforation does occur, the surgeon must then decide whether to operate or delay. This question has caused a great deal of discussion at surgical meetings and in medical journals in recent years. Perhaps the views of the majority of surgeons in this country may now be summarized as follows:

Patients seen during the first twenty-four hours of perforation should be operated upon; those seen after that time should be treated by conservative measures. Obviously, just as no persons are alike, so no two cases are the same and each case must be treated according to the condition of that particular patient. More and more cases of spreading peritonitis and ileus are being successfully treated by duodenal suction, heat therapy, and hypodermoclysis—fewer and fewer cases by appendectomy, appendicostomy, ileostomy, and other surgical procedures.

There is no general agreement among surgeons as to the ideal time to drain an appendicial abscess; some prefer waiting days, weeks and even months. Most surgeons now seem to agree, however, that if the appendix is ruptured and shows signs of localizing, early drainage and destroying nature's walling-off process is contraindicated. Likewise it is now generally agreed that surgical interference in the presence of a general spreading peritonitis of more than twenty-four hours' duration has little to offer.

It has been our good fortune at the Jackson Clinic to have had no deaths from appendicitis for the past eight years. During this period, 1201 operations for appendicitis have been performed of which 541 were for chronic, 326 for subacute, and 334 for acute appendicitis; of the latter there were 135 cases of gangrenous and thirty-four of perforated appendicitis with peritonitis.

While this series of thirty-four cases of perforated appendicitis is not large, the fact that operation was performed by three different surgeons using the same general principles may warrant the trial of these methods by others. All operations were performed under spinal anesthesia which was adopted at our clinic in 1928 as a routine procedure for abdominal surgery. With the substitution of spinal for inhalation anesthesia, a general reduction not only in the serious complications, but in the mortality for this disease occurred. From January, 1921, to January, 1938, 129 cases of perforated appendicitis with peritonitis were operated upon at the Jackson Clinic with a loss of eighteen patients or a mortality of 13.9 per cent. All but two of these deaths occurred when inhalation anesthesia was used.

It is obvious, in our experience at least, that the choice of anesthesia has been an important factor in lowering the death rate for appendicitis. This is further substantiated since there has been little or no change in the surgical technique. The factors of duodenal suction and hypodermoclysis have undoubtedly contributed to the lowering of mortality in the past decade.

Some of the more important steps in surgical technique are the following: An incision giving adequate exposure; the right rectus, McBurney, and the pararectus have been used with comparable results. Unlike many surgeons I seldom use the McBurney incision as I feel that better exposure is obtained with the pararectus incision which facilitates the operation. Nor have I observed a tendency to postoperative hernia, one having occurred in a series of thirty cases of perforated appendicitis which required drainage.

Every effort is made to minimize handling of the tissues and to localize the area of infection, which, if it has not spread to the upper abdomen, is carefully walled off by sponges. It is here that spinal anesthesia permits the contracted intestines to be gently and easily packed off. Suction is instituted as soon as the peritoneum is opened or the abscess located. The appendix is generally removed although in a few instances it has seemed advisable to delay this step until a secondary operation. As a general rule, we do not approve of this latter procedure.

If possible the stump is inverted with a purse

string ligature of silk (or chromic catgut if preferred). If it is impossible to invert the stump because of edema, it is ligated and covered over either with cecum or a fat tag.

Drainage is considered important and a cigarette drain is usually carried to the site of perforation. In addition a counter soft rubber tube is carried from the incision through a stab wound in the flank to provide drainage for the peritoneal gutter and thus minimize the tendency to subphrenic abscess. No attempt to remove these drains is begun before the fifth day after which they are gradually withdrawn and usually entirely removed by the twelfth day. A smaller size drain is usually sutured to the flank drain and replaces the latter as it is withdrawn. Gentle irrigation with saline solution or Dakin's is carried out twice a day through the flank drain.

The postoperative care of cases of perforated appendicitis is a very important factor in the successful recovery of the patient. One should not wait until complications develop before instituting treatment; every effort should be made to anticipate and prevent them. Dr. William Mayo often impressed me with his remarkable ability to suspect and ward off an impending operative sequela.

Undoubtedly, most of the postoperative complications in this condition in the past have resulted from the use of inhalation anesthesia and even more important, from failure to keep the gastrointestinal tract empty. For many years I have followed the principle advocated by the late Starr Judd of withholding all fluid by mouth so as to keep the gastrointestinal tract at rest. This in addition to the stomach tube served its purpose well, but duodenal suction has proved even better.

If postoperative atelectasis and other chest complications are to be prevented, the patient should be kept off his back most of the time during the first few days. Deep inhalations, the use of leg exercise and digitalis, and getting the patient out of bed as early as possible all tend to prevent phlebitis and embolism. Good nursing will, I believe, largely prevent these sequelae.

In my own small series of thirty cases of perforated appendicitis with peritonitis one case of postoperative hernia and one death from spread-

ing peritonitis occurred. Two cases of postoperative ileus were controlled by hypertonic salt solution. Since using spinal anesthesia and duodenal suction, there have been no instances of postoperative ileus. No cases of subphrenic abscess, obstruction, or pneumonia developed probably because of good luck and a small series of cases.

CONCLUSIONS

1. Approximately half a million deaths from appendicitis have occurred in the United States during the past thirty years.

2. In spite of the advances in surgery, medicine, and anesthesia, the death rate of the past decade exceeds that of the first ten years of this century.

3. Two persons will die from appendicitis every hour in this country during the year 1939.

4. The death rate must be lowered by decreasing the number of cases that are allowed to rupture. Appendectomy performed before perforation occurs is attended by a mortality of less than one per cent.

5. Lay education on this subject has served to decrease the number of cases going on to perforation. Children must be taught the importance of the three P's—purgatives, perforation and peritonitis as well as the three R's.

6. From January 1, 1931 to January 1, 1939, 1201 operations for appendicitis were performed at Jackson Clinic. There were no deaths in this series which included thirty-four cases of ruptured appendicitis with peritonitis.

7. The fact that no deaths occurred during this period of eight years is largely attributed to the substitution of spinal for inhalation anesthesia.

8. Spinal anesthesia has simplified the operation, reduced the complications and lowered the mortality. Contributing factors have been the use of duodenal suction and hypodermoclysis.

9. No essential change in surgical technique has occurred although the author has abandoned other incisions in favor of the pararectus.

10. The question of drainage is an important factor in preventing postoperative complications.

1. Bower, John O.; Burns, J. C., and Mengle, H. A.: Spreading Peritonitis Complicating Acute Perforative Appendicitis. Experimental Studies, *Archives of Surgery*, 37: 751, 1938.

EVERYDAY PROBLEMS IN GYNECOLOGY

LEO BRADY, M. D.

BALTIMORE, MARYLAND

President and Members of the Macon County Medical Society, I feel greatly honored to have been asked to come here this evening. Unless he happens at the moment to have something original to report a gynecologist when asked to speak before a City or County society does one of three things. He either reports a series of unusual cases, discusses in detail some one gynecological subject, presenting much historical data and many references, or simply outlines the way in which he treats the women who come to him with the ordinary gynecological complaints, which both the man in general practice and the specialists are hearing about everyday. I have decided to follow the third course, hoping to make this paper of practical value, but in doing this I realize that I am running the risk of talking about conditions and methods of treatment which my listeners probably know just as much about as I do and perhaps more.

LEUCORRHEA—There is perhaps no term one hears oftener in gynecological parlance than leucorrhea and yet strange to say its meaning is often misunderstood. Actually leucorrhea means nothing more than a discharge from the female generative tract. It may come from the vagina, cervix or body of the uterus. Not infrequently women come to the gynecologist complaining that they have noticed a discharge and ask if he thinks that they have leucorrhea. If he tells them that they have leucorrhea he is using a term which may impress them but actually he is not telling them anything for, as used at the present time, the term leucorrhea does not in any way signify the type of discharge.

In discussing leucorrhea a simple way to consider the subject is perhaps to first discuss leucorrhea as seen in a child, then as it occurs in a woman during menstrual life and finally as it is seen in women beyond the menopause.

As you all know the great majority of cases of leucorrhea in children are due to vaginitis, and the gonococcus is responsible for most of these infections. Most of these infections are inno-

cently acquired, seldom is there a history of rape. The disease is contracted through contact with other children and is spread through toilet-seats, linen, etc. It has been known for a long while that the gonococcus often causes a vaginitis in children and rarely a salpingitis, while in adults the vagina is resistant to this infection and the cervix, urethra and fallopian tubes susceptible to it. This susceptibility of the child's vagina is due to the fact that it is lined with only six to fourteen layers of cells instead of from twenty-five to forty as is the adult woman's vagina.

Until the estrogenic methods of treating this disease were discovered gonorrheal vaginitis in children was an extremely difficult condition to cure. Protargol, silver nitrate and various other antiseptics were used. My own favorite antiseptic was mercurchrome in a strength of from five to twenty per cent., but all of these antiseptic methods of treating this condition are so inferior to the modern treatment with estrogens that they have been almost entirely discarded. There is, however, one point which I think is worth remembering about the older methods of treating gonorrheal vaginitis in children by vaginal instillations, namely, that these instillations can be given more easily and effectively if the child is placed in the knee-chest position.

Some of us fail to appreciate in how many different ways the knee-chest position can at times be helpful. We, of course, know that it is the position used in the Kelly or air method of cystoscopy and, as I have just said, it is a good position in which to place a child when antiseptics are to be instilled into the vagina. What we are apt to forget is that it is much easier to remove foreign bodies from a child's vagina when she is placed in the knee-chest position.

I remember well a case in which I was called to see a three-year old child who had gotten an open safety pin stuck high in the vagina. The doctor had been trying to remove the pin by placing a clamp on the end of it and pulling on it but was unable to do so, because the open end of the pin kept tearing the mucous membrane, hurting the child and making her entirely uncooperative. He telephoned me and asked me to have an anesthetist at hand so the child could be put to sleep and the pin removed. However,

the child was simply placed in the knee-chest position, the buttocks elevated and air allowed to rush into the vagina. It was then a simple procedure to remove the open safety pin without giving the child an anesthetic and without hurting her.

It is of interest to consider for a moment the way in which the estrogenic or endocrine method of treating gonorrheal vaginitis in children came into being. The anatomists taught us the difference in the structure of the child's and the adult woman's vagina, which I have already brought out. Allen,¹ a laboratory worker, experimenting with immature animals, showed that he could transform the vagina of the young animal to the adult type by giving injections of one of the estrogenic substances. Lewis,² working at Yale, found that he could do the same thing in children and knowing that the adult vagina is very resistant to the gonococcus he decided to treat gonorrheal vaginitis in children by transforming the child's vagina to the adult type. He gave estrogenic substances hypodermically and obtained fairly satisfactory results.

TeLinde and Brawner,³ working at the Johns Hopkins Hospital, found that much better results could be obtained by giving estrogen in the form of vaginal suppositories and the method that they advocated is as follows:

Every night one suppository containing 1,000 International Units of one of the estrogenic substances is inserted high in the vagina. This is continued for from four to six weeks and in almost one hundred per cent. of the cases the method has been effective. Careful follow-up studies of this work has shown that recurrences of the infection have not occurred except in a few patients and in them there was thought to have been a reinfection. The particular estrogen in the vaginal suppositories used by TeLinde and Brawner was amniotin, which is the Squibb's preparation of estrone, but several other pharmaceutical houses have brought out vaginal suppositories containing estrogenic products and probably they are just as effective as amniotin.

After TeLinde and Brawner's report had been published it seemed like the last word had been said on the subject of gonorrheal vaginitis but such was not the case for Karnaky,⁴ working in Houston, Texas, now claims that the cures obtained by transforming the child's vagina to the

adult type are not due as much to the increase in the numbers of layers of cells lining the vagina as they are to the increase of the acidity of the vaginal secretion which occurs when suppositories containing estrogen are used. In support of this Karnaky reports that by using floraquin tablets, which do not contain estrogen but do lower the pH of the child's vagina, he is able to obtain just as good results as he does with estrogens. It certainly is of interest that the child's vagina is normally alkaline, having a pH of from 7 to 8, while the adult woman's vagina is acid with a pH of 4 to 4.4 and that when floraquin tablets are used the child's vagina does become definitely more acid.

However, these floraquin tablets which incidentally are put out by Searle and Company have, since Karnaky first recommended their use, been tried in cases of gonorrheal vaginitis in the dispensaries of both the Johns Hopkins and University of Maryland and it has been the impression of the men working in both clinics that the estrogenic suppositories yield better results than do the floraquin tablets.

In children we see a few cases of non-specific vaginitis which are probably due to the staphylococcus or streptococcus. Most of these infections also clear up when estrogenic suppositories are used. Once in a while the oxyuris vermicularis, sometimes called the pinworm or seatworm, goes forward into the vagina and sets up a vaginal irritation. These cases, of course, should receive the usual treatment that is given these infestations. As a matter of fact an application every night of a weak mercurial ointment around the anus will effect a cure in many instances.

In women during menstrual life the trichomonas vaginalis is the commonest cause of leucorrhea. There is in my mind not the slightest doubt that this statement is true when one is referring to the type of women seen in private practice and, I believe, it is also true for dispensary patients, although gonorrheal endocervicitis in this latter type of patients runs the trichomonas a close second as a cause of leucorrhea.

It should be emphasized that the gonococcus in the adult woman does not cause a vaginitis but a urethritis and endocervicitis, while the trichomonas causes a vaginitis and little, if any, endocervicitis. The characteristic lesion in tricho-

monas infections is most often seen in the upper posterior part of the vagina just behind the cervix. One not infrequently sees in this area minute red spots, giving the upper posterior vaginal wall a strawberry-like appearance.

Some of those who have written about trichomonas infections have stated that the discharge often contains bubbles and is apt to have a slight greenish tint. Personally, I have seldom observed these characters in the discharge. In my experience there is nothing that is characteristic in the appearance of the discharge. It may be thick or thin, yellow or white. It is, however, apt to cause much more irritation than does the discharge caused by endocervicitis. The trichomonas is one of the commonest causes of pruritus and dyspareunia. The same amount of infection may cause varying amounts of discomfort in different women but in my experience practically all women who harbor in their vagina the trichomonas have some symptoms, even if they are only a little itching and discharge just before and after the menstrual period.

The trichomonas rarely invade the urethra and Bartholin's glands. Cases of salpingitis, due to the trichomonas vaginalis, have been reported but although I have seen many hundreds of patients with a leucorrheal discharge due to these organisms I have never seen a case of salpingitis which I thought they were responsible for.

The trichomonas is a protozoa with actively moving flagella at one extremity and an undulating membrane. The latter cannot always be seen as easily as the flagella. These organisms are larger than an ordinary pus cell and yet smaller than the epithelium which lines the vagina and which can always be seen in vaginal smears. The trichomonas are very motile. Under the microscope the flagella can be seen moving rapidly. When the protozoa happen to be caught under a mass of epithelial cells they often make the whole clump of cells move.

The diagnosis is made by demonstrating the organisms under the microscope. No special apparatus is needed. All that is required is a microscope, a little normal salt solution and an ordinary microscopic slide. In some articles you will read that hollow ground slides should be used in studying the trichomonas but they are not necessary. The technique for demonstrating

these organisms is as follows: One inserts his gloved finger high in the vagina behind the cervix and takes a drop of the secretion on his gloved finger, mixes it with a little normal salt solution and at once examines the preparation under the microscope. The organisms can be seen under both low and high powers. It is not necessary to stain them. If one prefers to put a coverslip over the normal salt solution preparation it is all right to do so.

In some women smears examined in the intermenstrual period may fail to show the organisms, while those taken immediately before or after a period will reveal them. In fact in some instances the organisms can more easily be demonstrated if the patient is examined when she is actually menstruating.

The diagnosis is often missed for two reasons. The first is the same reason that explains why so many conditions remain undiagnosed. It is that they are not thought of. The second reason that explains why physicians sometimes fail to make the diagnosis is that while they think of trichomonas vaginalis as a possible cause of leucorrhea they think of it two minutes too late. This is what often happens. A woman comes to a doctor complaining of a leucorrheal discharge. He thinks of endocervicitis, polyps, carcinoma and many other gynecological conditions as being the possible cause of the discharge. He at once puts green-soap or some other lubricant on his fingers and does a pelvic examination. After his examination has failed to demonstrate any of the conditions mentioned above he then thinks of the possibility of a vaginitis due to the trichomonas vaginalis, takes smears and looks at the material under the microscope and fails to see the organisms. This may be due to the fact that the green-soap on his fingers killed the trichomonas which were in the superficial tissues and by which the diagnosis could have been made. I have gotten into the routine of taking smears for trichomonas vaginalis as the first step in my study of all patients who come to me complaining of leucorrhea, pruritus and dyspareunia.

Another factor that sometimes interferes with the diagnosis of trichomonas infections and also of gonorrhea is that many women through a natural sense of cleanliness will take a douche immediately before coming to a doctor's office

and will thus prevent the physician from making the diagnosis. It is well to ask every woman who comes to you complaining of leucorrhea when she took her last douche.

Several theories have been advanced to explain how it is that so many women become infected with the trichomonas vaginalis and while these theories are of interest none of them seem to satisfactorily explain all of the cases. First of all there is the idea held by some authorities that because trichomonads are often found in the rectum that many of the vaginal infestations are due to the protozoa being carried from the anus to the vagina. Those who hold this opinion believe that the differences shown between the trichomonads secured from the vagina and those obtained from the anus can be explained on the grounds that the protozoa changes its characteristics according to its environment. Others and indeed most authorities on protozoa believe that the anatomical and biological differences between the trichomonas vaginalis and trichomonas fecalis are too great to permit of their being explained in this way and that really these are two different organisms. Be that as it may it seems worth while in all cases of trichomonas infections of the vagina to take measures against possible reinfection from the anus and this means instructing women to clean themselves after defecation from the vagina to the anus which incidentally is not the usual method of toilet technique in women for most of them clean themselves after defecation in the reverse manner, namely, from the anus to the vagina.

Carl Davis⁵ in his book on Gynecology and Obstetrics writes "It is probable that a considerable number of infections are secured from contaminated bath water since so many patients develop the infection during the summer months while bathing in rather still water of inland lakes." This unquestionably accounts for the infection in some instances, for ever so often several women who have been swimming in the same pond will simultaneously develop a vaginitis due to the trichomonas vaginalis. This has been reported by others and I have observed it myself. Nevertheless, there are many trichomonas infections which cannot be explained in this manner for the condition is not infrequently seen in women who have not for years been out of a city or had a swim in any pond.

Trichomonas infections are rarely seen in men, but in persistent cases of vaginitis the possibility of a woman being reinfected through sexual intercourse must be thought of. However, a trichomonas infestation should not be considered a venereal disease, for the trichomonas causes almost as many cases of vaginitis in virgins as it does in married women.

It is only fair in discussing the trichomonas vaginalis to mention that certain writers claim that there is no definite proof that it is a pathogenic parasite, even though it is usually found in pathological vaginas. Hibbert and Falls⁶ reported that in a group of patients with vaginitis and trichomonas vaginalis in the secretion they isolated a streptococcus called the streptococcus subacidus. These workers feel that the streptococcus is the real cause of the leucorrhea. They have made a vaccine from it and treated patients with the vaccine hypodermically and locally have used a broth filtrate in the vagina. However, there were a number of cases in which this treatment failed either to relieve the patient's symptoms or to get rid of the trichomonas organisms. In fact their results were no better than those obtained when treatment was directed directly towards the trichomonas vaginalis.

Clinically, it seems to me of little importance whether the trichomonas itself is responsible for the patient's symptoms, whether the trichomonas and a streptococcus or some other organism together produce the symptoms or whether the trichomonas simply makes the vagina more susceptible to a streptococcus infection. It has been my experience that practically all women with trichomonas vaginalis in the vagina have some symptoms. When the protozoa disappear the symptoms stop and when the symptoms recur, as unfortunately is not unusual, careful search will show that the organisms are again present. In support of the idea that the trichomonas are definitely pathological Bland⁷ demonstrated that the presence of the trichomonas vaginalis in the vagina of pregnant women increases puerperal morbidity.

There are many ways of treating trichomonas vaginalis vaginitis. Personally, I have tried ten different methods. All these methods are sometimes successful and in my experience none of them are always successful. Almost all of them will give the patient immediate relief and make

her feel grateful to her doctor, but the physician must not be too enthusiastic about the immediate results because in a large number of instances there are recurrences after the menstrual period. Some gynecologists will prefer one method of treatments, others prefer another. I shall now outline the methods of treating trichomonas infections which have given me the best results.

First of all there is the method recommended by Greenhill⁸ in 1931. It is now somewhat out of fashion but if a patient is willing to come to a doctor's office for a series of visits, extending over a period of six weeks, I still feel that this is one of the best ways of getting permanently rid of this infection.

The patient is instructed to come to the office three times a week for the first week of treatment and then twice a week during the rest of the time, except when she is menstruating, and while the period is on she must come every other day. Quite naturally women will not want to come to a doctor's office when menstruating but if they are told when the treatments are started that this will be necessary most women will co-operate and, incidentally, whether the Greenhill method of treatment is used or douches and tablets are prescribed, it is necessary in most all of the ways of treating this infection for the treatments to be carried out while the patient is menstruating.

The Greenhill method of treatment consists of scrubbing the vulva and vagina with a solution of tincture of green-soap. The vagina is then filled with hexylresorcinol and finally with glycerin. I am not certain how much good the hexylresorcinol and glycerin do but as they are part of the technique recommended by Greenhill I use them in addition to the green-soap. Between treatments the patient is instructed to wash the external genitalia with green-soap and then to take a tincture of green-soap douche. Sometimes lactic acid douches are used instead of the green-soap one teaspoonful of the lactic acid being used in two quarts of water.

The Greenhill method of treatment does bring about a permanent cure in a large percentage of cases of trichomonas vaginalis vaginitis but it fails in some instances. As I have said before, one must be very careful not to conclude that the infection has been entirely cleared up and this applies to whatever method of treatment has

been carried out. Before a doctor has any right to feel certain that he has cured a woman who has had vaginitis due to the trichomonas vaginalis, examination of smears taken at the end of menstruation must be absolutely negative for three consecutive months.

A second method which has given me good results and which I have tried on a fairly large number of patients is the one in which silver picrate is used. It has the advantage that usually the treatments are finished in two weeks. The patient comes to the doctor's office, the vagina is swabbed with cotton until it is absolutely dry and then by using a special insufflator, which resembles an atomizer, silver picrate powder is blown into the vagina so that it is spread over the vaginal walls. The patient then inserts one silver picrate suppository high into the vagina every night for six nights. At the end of this time she returns for a second office treatment and then uses the suppositories for another six nights. During these two weeks the patient is instructed not to take a douche nor a tub-bath and not to have sexual intercourse. Patients complain that this is a very unpleasant treatment as it necessitates them wearing a perineal pad during the entire two weeks.

There is probably some danger in a patient using these suppositories longer than two weeks for on the back of the box containing the suppositories the firm—John Wyeth and Brother—has the following written: "Protracted use over a considerably longer time might conceivably give rise to argyria as with any silver preparation."

A third method of treatment which deserves consideration and which is the one most easily carried out by the man in general practice is the method advised by Karnaky of Texas. The same floraquin tablets which he recommends for gonorrheal vaginitis in children he uses in trichomonas infections in adult women. These suppositories contain lactose, dextrose, boric acid and diodoquin. The latter, namely, diodoquin is an antiseptic containing a certain amount of iodine but it is thought that it plays only a small part in bringing about the results claimed for these tablets. The acidulated dextrose is much more important as it is the principal factor in increasing the vaginal acidity until the pH is lowered to 4.0. The lactose is broken down by bacillary action

and the lactic acid produced also helps keep the vagina acid and stimulates the growth of the large Döderlein bacilli which when present increase the resistance of the vagina to infection.

One of these suppositories is inserted high into the vagina every night for a period of from four to six weeks, and while the patient is menstruating the number should be increased to two. Unless the vagina becomes filled through these suppositories failing to be absorbed vaginal douches are not necessary, but usually the patient is more comfortable if she takes a douche twice a week in which case lactic acid douches are recommended—one teaspoonful to two quarts of water. Indeed this is a very effective douche for all purposes except in the fungus infections of the vagina. The lactic acid douche is quite acid, having a pH of 2.85. Incidentally, lactic acid comes as a liquid—United States Pharmaceutical Preparation, containing 85 per cent lactic acid. Another douche which produces a marked acidity of the vagina and which is fairly satisfactory for general use is the vinegar douche—three tablespoonfuls of vinegar (5 per cent. acetic acid) being used to two quarts of water. Such a vinegar douche has a pH of 4.0.

One preparation which I might speak of at this time, not only in connection with trichomonas vaginalis vaginitis but also in connection with the treatment of endocervicitis, is negatol. I do this with some hesitancy, because I do not know what is in it and while it has been used in many of the best known clinics in this country and in Baltimore by both the Johns Hopkins and University of Maryland Staff none of the men using it knows what is in it. It is interesting to consider that a preparation the composition of which is not known should be so widely used and perhaps this casts some reflection on the medical profession. There are only two explanations that occur to me for the popularity of this preparation. One is that the preparation has, when tried, proven to be effective and the other is that the man who is trying to put it on the market is a good salesman. I think a little of both of these reasons explain how this drug has come to be so widely used.

The man who is advocating the drug is named Eli Joseph and he came over to this country sometime ago from Europe. He established his headquarters at the Ambassador Hotel in New

York City and then went to various gynecologists all over this country, telling them about this wonderful preparation which was so effective in the treatment of endocervicitis and vaginitis. In fact, he claims that the preparation controls bleeding from the cervix which, incidentally, is true to a limited extent. The gynecologists that he visited were asked by him to supply him with the names of other gynecologists, so probably he had on his mailing and shipping list the names of a large number of gynecologists.

To all those on his list he sent several bottles of the 100 per cent. solution of negatol and many boxes of the 10 and 20 per cent. suppositories. He also wrote at least once a week to all those using his preparation, asking for reports of their results. He is now in Paris but I still receive letters from him. In addition to carrying out these activities Mr. Joseph, who certainly is a "hustler," contacted several of the largest and longest established pharmaceutical houses in this country trying to interest them in negatol and in one of his last letters he wrote that Lilly and Company are going to handle negatol in this country.

Anyhow the preparation is quite remarkable. It does sometime produce astonishing results in chronic endocervicitis, although whether the results will prove to be permanent or not no one knows. It cures some cases of trichomonas vaginalis vaginitis, but has failed in several cases that I have tried it on. It will stop the bleeding from the cervix that follows the removal of tissue for biopsy study.

When you use this preparation, which probably will soon be on the market though perhaps under a different name, it is well to remember certain things. The preparation causes the patient to pass a complete cast of the cervix and vagina. In my experience it usually takes from five to eight days before this happens. If you do a pelvic examination just about when this is going to occur you will be surprised on withdrawing your fingers to find that you have removed an elongated whitish opaque like membrane. This may be from one to three inches long but what is apt to surprise you most is that after this cast is removed the underlying tissue looks so healthy. If the patient has not been warned about this cast which she herself may pass between the times that she sees her doctor she may be greatly upset.

One patient returned to her doctor complaining that he had left a sponge in the vagina. One of my patients was terribly embarrassed when an elevator on which she was descending stopped suddenly and as she braced herself a complete cast of the vagina slid to the floor.

As I have said, this preparation is remarkable and I feel that its use in moderation is justified. However, I hesitate to continue using it on any one patient for a long period of time. It seems to me possible that vaginal adhesions might result. I have had only one patient who was sensitive to negatol. She developed intense burning and itching following its use. Most women complain slightly when the 100 per cent. solution touches the external urethra and vulva, but experience no discomfort when the cervix and the upper vagina are painted with it. Moreover, the 10 and 20 per cent. suppositories rarely cause any irritation.

For the most part I have been willing to go along with many of the other gynecologists in this country in following Mr. Joseph's suggestion as to how to use negatol. However, when he suggested that in the resistant cases of trichomonas vaginalis that had not yielded to his preparation I have the patient insert suppositories into the rectum, as well as the vagina, such a procedure did not seem to me unassociated with danger and I did not carry it out. So much for trichomonas vaginalis and negatol.

Second only to trichomonas vaginalis vaginitis comes endocervicitis as a cause of leucorrhea. Many but by no means all the cases of endocervicitis are due to the gonococcus. The cervix and urethra are, of course, the first two areas to be invaded in acute gonorrhea and when the disease becomes chronic it is often in the cervical glands that the infection persists. This accounts for many of the cases of endocervicitis but others result through the ordinary pyogenic organisms, such as the streptococcus and staphylococcus, invading the cervical tissue when the cervix is torn and traumatized through childbirth injuries. It is not my intention to discuss in detail the treatment of gonorrhea in the adult woman, but I am enthusiastic about the results obtained in early cases of gonorrhea and acute gonorrheal salpingitis by the use of sulphanilamide. You doubtless notice that I distinguish between early cases of gonorrhea and acute gonorrheal salpin-

gitis, for rarely does salpingitis develop in the early stages of this disease although most women fail to consult their physician until the tubes have been invaded. In fact, in dispensary practice one rarely, if ever, sees gonorrhea in its early stages. In private practice the gynecologist does see a few of these cases and they usually come to him in the following manner. The husband has extra-marital relations and before he discovers that he has contracted gonorrhea has intercourse with his wife. A few days later he learns the truth about himself. His conscience then hurts him and he sends his wife to a gynecologist for examination. These women when seen usually have no complaints, except perhaps slight burning on urination and a little discharge. Nevertheless, these are the cases of early gonorrhea that correspond to acute gonorrheal urethritis as seen in the male and it is in these women that gonococci in great numbers can usually be seen in smears from both the cervix and urethra. I have had about a half dozen opportunities to use sulphanilamide in just such cases and in all of them the infection has cleared up rapidly. Many reports are being published about the use of sulphanilamide in acute salpingitis and while in many instances encouraging results have been obtained as shown by the symptoms subsiding rapidly it is still too early to feel confident that sulphanilamide will lessen the number of these women who eventually come to operation. In my opinion, when sulphanilamide is prescribed it is desirable to have a complete blood count made at least every 48 hours. If this is not feasible the physician should at least insist on seeing his patient frequently. All those who have used sulphanilamide extensively have seen many complications develop while the patient is receiving this drug. Some of these are of minor importance, but a few are serious and we must be constantly on the lookout for them.

Chronic endocervicitis whether gonorrheal or non-specific in origin is, in my opinion, best treated by cauterization of the cervix. This need not be done in a hospital or under an anesthetic, except when there are deep lacerations or marked eversion of the mucosa. When cauterizations are carried out in the office it is often better to cauterize only part of the cervix at one time, taking two to three visits to complete the procedure. In cauterizing the cervix it is well to fol-

low the technique recommended by Guy L. Hunter⁹ thirty-three years ago, namely, making radial strokes in the cervical tissues so as to leave some good tissue between the strokes and thus prevent cervical stenosis. I prefer using a small nasal cautery to a larger cautery which destroys more tissue.

The time in the menstrual cycle at which a cauterization is carried out is of importance. It should be done either half-way between periods or even better just after a menstrual period; never immediately before a period. There is normally some hyperemia of the cervix with the onset of a menstrual period and if the tissue is traumatized at that time by an operative procedure, such as a cauterization, any organisms, particularly streptococci which happen to be present, may be carried through the lymphatics to the broad ligaments and peritoneum and may even get into the blood stream and cause a septicemia. We get into the habit of considering a cauterization of the cervix as a very simple procedure unaccompanied with any danger and for the most part this is true, but once in a great while serious results have followed a cauterization. Nevertheless, Jacopy¹⁰ in a recent article comparing the end results in the treatment of endocervicitis by electrophysical methods, namely, cautery, coagulation and conization, showed that results were obtained more rapidly and with fewer complications by cauterization than the other two methods.

Another article recently published which is of importance when one is considering the cause of leucorrhea in the adult woman was written by Poindexter.¹¹ He made numerous observations on gonorrheal and trichomonas infections and observed that gonococci are seldom found in pus containing a large number of the trichomonas, monilia or Döderlein bacilli. This finding corresponds with my own experience.

Poindexter also noted that sulphanilamide is effective when used in acute cases of gonorrhea but has no significant effect on leucorrhea due to the trichomonas vaginalis. In the few cases of trichomonas vaginalis in which I have used sulphanilamide it has not been effective.

Some gynecologists, among whom might be mentioned Plass¹² of Iowa City, report that they see many patients in whom a leucorrheal discharge is caused by yeast-like organisms infect-

ing the vagina. Personally, I have seen only a few of these infections and my confreres in Baltimore tell me that such has also been their experience, although many of us routinely look for fungi in all cases in which leucorrhea is a symptom.

When budding yeast cells and branching mycelial are present they can usually be seen by a simple examination of the leucorrheal discharge itself under a microscope, but the addition of a few drops of either ten per cent. sodium or potassium hydroxide to the discharge makes it easier to recognize these fungi. All types of fungus grow readily on Sabouraud's media.

One must, however, not be too hasty in concluding that because there are a few yeast cell-like organisms present that necessarily the vaginitis is due to them, for yeast and various other fungi are found almost everywhere and their presence may have no etiological bearing on the patient's complaint. For many of them are non-pathogenic and it requires rather complicated laboratory studies to definitely determine which groups are pathogenic and which are not.

However, it is well to remember that some cases of vaginitis are due to yeast and various fungi and that these infections usually clear up in from one to two weeks if the vagina is painted daily with a solution of gentian violet in a strength of from two to five per cent. Women with such infections are also helped by potassium permanganate douches in a strength of one to three thousand.

The most striking case I have ever seen of vaginitis due to a fungus occurred in a patient who hired a bathing-suit at one of the public bathing beaches and shortly afterwards developed a profuse leucorrheal discharge with a tremendous amount of irritation of the vagina, external genitalia and inner sides of the thighs. The condition cleared up in one week under gentian violet therapy.

Occasionally white opaque spots are seen on the vulva and vagina in cases of fungus infection. These are due in some instances to a particular type of fungus called the *monilia albicans* which is responsible for thrush as it is seen in the mouths of children. It is of interest that Woodruff and Hesselstine¹³ have shown that thrush occurs oftener in the mouths of infants

whose mothers have been shown to harbor fungus in the vagina.

In diabetic vulvovaginitis it was thought for many years that in some way the sugar in the urine irritated the tissues and thus caused a leucorrheal discharge. However, recent work by Hesselstine and Campbell¹⁴ indicates that the glucose does not in itself directly cause the trouble but makes the tissues more susceptible to fungus or mycotic infections. This means that in all cases of vulvovaginitis in diabetic patients fungi should be looked for in smears and if they are found proper local treatment should be given while such general measures are carried out as will make the urine sugar free.

Senile vaginitis sometimes causes a leucorrheal discharge but many women with senile vaginitis although complaining of itching and irritation have very little discharge. Indeed in the majority of instances the parts instead of being too moist are too dry and fissures develop. Many elderly women will tell you that even though they have been taking douches two or three times a day they still feel constantly irritated. Merely instructing them to stop taking the douches and to instill two or three times a week one ounce of olive oil in the vagina will give some of these patients relief.

However, estrogenic therapy is indicated in most cases of senile vaginitis and, incidentally, pain on coitus is often one of the first symptoms complained of by women who are developing this condition. Specifically, a woman is instructed to insert high into the vagina every night one suppository containing 2,000 I. U. of one of the estrogenic preparations, such as amniotin or theelin. It takes about two to three weeks before the patient feels better and about six weeks to get complete relief. Unfortunately, in many cases the results are not permanent, but if the symptoms return after a few months it is usually easier to get results by estrogenic therapy than it was the first time and smaller doses are more apt to be effective. Incidentally, these estrogenic suppositories come in two strengths, the weaker containing 1,000 I.U. instead of 2,000 I.U.

It has been found that the so-called estrogenic pearls which are put out by some of the pharmaceutical houses for oral administration are just as effective when inserted into the vagina as are

the vaginal suppositories and they cost about one-third less for the same dosage. This is worth remembering because even though the cost of estrogenic preparations is less than it was several years ago it is still fairly high.

One more point about senile vaginitis. Not infrequently it is complicated by a mycotic or fungus infection. Then it is probably best to treat the patient for a week or two with one per cent. gentian violet locally before starting the use of the estrogenic vaginal suppositories.

This is all I am going to say about leucorrhea. Myomas, polyps, carcinomas and other surgical causes of vaginal discharges have not been considered, as I have been talking so far on what might be called office gynecology. When leucorrhea is due to the causes that I have covered in detail there is seldom any history of the discharge containing blood or even being blood tinged. As soon as such a history is obtained the possibility of a neoplasm must be considered and if the pelvic examination does not enable the examiner to make a diagnosis a diagnostic curettement is usually indicated.

More women consult the gynecologist because of dysmenorrhea than for any other symptom except leucorrhea. When on examination the patient is found to have some definite pathological condition, such as myoma, an inflammatory mass or a retroposition of the uterus, the treatment is of course directed towards correcting the evident abnormality, but the difficult cases to treat are those in which the examination shows the pelvic structures to be essentially normal. These are the cases of so-called primary dysmenorrhea.

To be sure, in some of the patients who are considered to have primary dysmenorrhea the body of the uterus may be flexed on the cervix at an unusually acute angle or the womb and ovaries may on examination appear to be slightly hypoplastic. However, these variations from what is considered to be the normal are often so slight that it is questionable how much part they play in causing the menstrual pains.

Many different types of surgical procedures and hundreds of drugs have been recommended to relieve primary dysmenorrhea and the ideal therapeutic measure has not yet been discovered. There is no doubt that many women are helped by a thorough dilatation of the cervix, although

it is a little difficult to understand why this procedure should in some cases be so beneficial.

In my experience, better results are obtained if Hegar dilators are used in performing a dilatation than when other types of dilators are employed. When using Hegar dilators the internal os is stretched more thoroughly. The operator in performing a dilation of the cervix can tell when the dilator passes through the internal os and the muscle fibres in this area relax.

Some gynecologists insert stem pessaries in cases of ante flexion of the cervix and also in simple cases of primary dysmenorrhea where the angle between the body and cervix of the uterus is normal, but I have almost entirely discontinued using this type of pessary. Pessaries are foreign bodies and some cases of severe endocervicitis and of even more serious complications have been reported to follow their use. Nevertheless, some very good gynecologists are still enthusiastic about the results obtained with stem pessaries.

The plastic operations to correct the angle between the body and cervix of the uterus have been almost entirely abandoned. They often caused endocervicitis and left the woman in such a condition that she was unable to carry a pregnancy to term.

Cotte¹⁵ claims excellent results from resection of the presacral nerve, but while the operation has obtained a certain popularity in Europe there are only a few American surgeons who recommend it. Cotte claims that when the operation is properly performed there is no danger of the patient developing bladder or rectal trouble but the possibility of such a complication occurring of course suggests itself.

At the present time probably the majority of articles written about the treatment of dysmenorrhea deal with the results obtained by endocrine therapy. It has been very definitely shown that the two hormones, namely, estrone and progesterone, have antagonistic effects on the uterine musculature, the former stimulating uterine contractions and the latter, namely progesterone, inhibiting them. From this it would seem that by using progesterone one could give women suffering with dysmenorrhea marked relief and in some instances this method of treatment has been effective. However, there are cases of dysmenorrhea in which the pain is apparently not due to

too much estrone but to too little. These are the cases in which the uterus is underdeveloped and in such instances estrone instead of progesterone is recommended.

The study of the control of menstruation and other functions of the generative tract by the endocrine glands is extremely interesting and offers great hope that before long much can be accomplished by endocrine therapy. However, most gynecologists with whom I have talked have been disappointed with the clinical results obtained by the use of endocrines in all the various gynecological conditions for which they have been employed except in the treatment of gonorrheal vaginitis in children and in the control of menopausal symptoms.

Certainly it is true that in many cases endocrine therapy has failed to relieve dysmenorrhea. Moreover, these preparations are seldom effective unless given hypodermically and women soon tire of repeated hypodermic injections. Then too it is difficult in some instances to decide whether estrone or progesterone should be given.

Of course, morphine will relieve menstrual pains but it should not be prescribed because of the danger of habit formation. However, there is very little likelihood of a patient becoming addicted to codein and I have no hesitancy in prescribing it to relieve dysmenorrhea. One drug which is often helpful is atropine and I like to prescribe capsules containing atropine grs. 1/120, codein grs. 1/2 and aspirin grs. v. The patient is instructed to take one of these capsules every four hours until the pain is relieved.

In the last year Hibbits¹⁵ of the University of Maryland Faculty has given benzedrine sulphate by mouth to a large number of women who suffered from dysmenorrhea and he reports that he has obtained excellent results with this drug. His work will be published soon but I have his permission to speak of it here tonight. The women are instructed to take in the morning on the day which their period is expected ten milligrams of benzedrine sulphate by mouth and to repeat the same dose four hours later. This medication can safely be repeated in this manner for three or four days. However, it is better not to take benzedrine sulphate late in the afternoon or evening as it has a tendency to prevent sleep for several hours after it has been taken. There are, of course, certain patients, particularly

those with high blood pressure, for whom benzedrine sulphate should not be prescribed. I have had some personal experience with this drug and have found it to be very effective in most of the cases in which I have tried it. It does not always work.

There is a patent medicine called "midol" which is advertised extensively as a boon to women who suffer from dysmenorrhea. The most effective ingredient in the preparation used to be pyramidon but after cases of agranulocytic angina were reported to sometimes follow the use of pyramidon this drug was removed from midol and aspirin substituted. In doing this the Company made their preparation harmless but apparently no more effective than aspirin.

Pruritus vulvae is the third and last of the gynecological complaints about which I shall speak. In my opinion, it is more often due to a trichomonas vaginalis infection than any other one cause. Yeast infections probably rank second in importance. Senile vaginitis with or without yeast infections comes third. Diabetes must always be thought of. In some instances pediculis pubis or crablouse is responsible. A true eczema of the skin is occasionally seen. Sometimes the examination is entirely negative and still the patient complains bitterly of pruritus. The treatment of course consists in removing whatever is the irritating factor, if such a factor can be found, but in those cases in which the examinations and laboratory studies are entirely negative small erythematous doses of x-ray are often helpful. In a few of the very persistent cases of pruritus of the vulva and also of the anus in which my examinations have been entirely negative I have injected 95 per cent. alcohol deeply into the superficial tissues and have had a few gratifying results. So far, I have never had a slough but the series of cases in which I have done this is small. There is no doubt but that sloughs do occasionally occur no matter how careful one is about his technique so this procedure should only be carried out on carefully selected patients for whom it is imperative to obtain relief even though there is some danger associated with the therapeutic measure.

So much for this rather rambling discussion of some of the commoner complaints for which women consult gynecologists. In closing I wish to again express my appreciation for the honor

you have bestowed upon me in asking me to speak before your Society this evening.

REFERENCES

1. Allen, Edgar: Sex and Internal Secretions, Williams and Wilkins Co., Baltimore, 1932.
2. Lewis, R. M.: A Study of the Effects of Theelin on Gonorrheal Vaginitis in Children, *Amer. J. Obst. and Gynec.* 26: 593, 1933.
3. TeLinde, Richard W., and Brawner, James N., Jr.: Experiences with Amniotin in the Treatment of Gonococcal Vaginitis in Children, *Amer. J. Obst. & Gynec.* 30: No. 4, Page 512, October, 1935.
4. Karnaky, Karl John: Discussion of Dr. Clarence B. Sacher's Paper on "The Treatment of Gonorrheal Vaginitis in the Young Female," Presented before the Section on Gynecology and Obstetrics at the Annual Meeting of the Texas State Medical Association, Houston, Texas, May 28, 1936.
5. Davis, Carl Henry: Gynecology and Obstetrics, W. F. Prior Company, Hagerstown, Maryland, 1933.
6. Hibbert, G. F., and Falls, F. H.: Further Observations on the Role of Streptococcus in so-called Trichomonas Vaginalis Vaginitis, *Amer. J. Obst. and Gynec.* 36: 219, 1938.
7. Bland, P. B.; Wenrick, D. H., and Goldstein, L.: Trichomonas Vaginitis in Pregnancy, *Surg. Gyn. and Obst.* 53: p. 759, 1931.
8. Greenhill, J. P.: The Treatment of Trichomonas Vaginalis Vaginitis, *J. A. M. A.* 96: 1862, 1931.
9. Hunner, Guy L.: The Treatment of Leucorrhea With the Actual Cautery, *J. A. M. A.* 46: 191, 1906.
10. Jacopy, A.: A Comparison of the End Results of Treatment of Endocervicitis by Electrophysical Methods: Cautery, Coagulation and Conization, *Amer. J. Obst. and Gynec.*, 36: 656, 1938.
11. Poindexter, H. A.: Some Observations on the Infectious Agents Causing Leucorrhea During the Childbearing Period, *Amer. J. Obst. and Gynec.*, 36: 1052, 1938.
12. Plass, E. D.; Hesselting, H. C., and Borts, I. H.: Monilia Vulvo-Vaginitis, *Amer. J. Obst. and Gynec.* 21: 320, 1931.
13. Woodruff, P. W. and Hesselting, H. C.: Relation of Oral Thrush to Vaginal Mycosis and the Incidence of Each, *Amer. J. Obst. and Gynec.*, 36: 467, 1938.
14. Hesselting, H. C., and Campbell, L. K.: Diabetic or Mycotic Vulvo-Vaginitis, *Amer. J. Obst. and Gynec.*, 35: 272, 1938.
15. Cotte, J.: Resection of the Presacral Nerve in the Treatment of Obstinate Dysmenorrhea, *Amer. J. Obst. and Gynec.* 33: 1034, 1937.
16. Hibbitts, J. T.; Personal Communication.

101 West Read St.

LATE OBSTETRIC HEMORRHAGES AS A CAUSE OF MATERNAL MORTALITY IN CHICAGO DURING 1938

CHARLES NEWBERGER, S.B., M.D.

Chicago

A study was made of all maternal deaths in Chicago during 1938, grouping them according to the various etiologic factors. The purpose of this paper is to discuss one of these groups: the deaths due to the late hemorrhages, including placenta praevia, abruptio placenta, rupture of the uterus, inversion and post partum hemorrhage.

There were 51,660 births reported in Chicago during 1938. Late hemorrhage was the direct cause of maternal death in 35 cases, 0.068 per cent., or once in 1,476 labors. Thirty-two of these patients were delivered in hospitals; of the three cared for at home, one was attended by a midwife, and the other two were taken to the hospital after the complication developed, one of these patients dying on the way. Autopsies were done in eight of these cases.

TABLE 1
PERCENTAGE OF DISTRIBUTION, BY CAUSE

Cause	Cases	Per Cent.
Placenta praevia	7	20.0
Abruptio placenta	6	17.1
Rupture of the uterus.....	5	14.3
Inversion of the uterus.....	2	6.7
Post partum hemorrhage.....	15	42.9
	35	100.0

PLACENTA PRAEVIA

Placenta praevia was the cause of death in seven patients, or 20.0 per cent. of the group under study. Of the total reported births, it occurred in 0.014 per cent., or once in every 7,380 labors. Two the patients were primiparae, five were multiparae; their ages ranged from 23 to 43, four being over 30 years of age. Only two patients had adequate prenatal care. Bleeding began in six cases at the 31st to the 37th week. The delivery was operative in each instance. Consultation was considered adequate in three cases. Two children were living, five were stillborn. Other treatment in addition to the delivery included transfusion, uterine packing, intravenous fluids, and oxytocics. In four cases death occurred within 4½ hours after the delivery, the average elapsed time being 2¾ hours; in the other three cases, death came in three to six days, once each from paralytic ileus, toxemia, and postoperative pneumonia. All of the cases, on analysis, were considered preventable, two being charged against the patient, and five against the attendant. An illustrative case is cited:

A white, married, 24-year old, gravida eight, para seven, was admitted to the hospital in her seventh month of gestation, because of severe bleeding. She was cold, clammy, and had a weak pulse of 96, which soon rose to 140. Fetal heart tones were not heard. Vaginal examination revealed 2 cms. dilatation, and placental tissue was felt at the external os. The vagina was packed, and the patient was given 15 cc. of blood intramuscularly. One and one-half hours later, the condition of the patient being more critical, she was again given 20 cc. of blood in the gluteal region, and

Read at Joint Session of Sections on Pediatrics and Obstetrics and Gynecology of Illinois State Medical Society, May 2, 1939, Rockford.

also 1,000 cc. of ten per cent. glucose by vein. Four hours after admission, because hemorrhage continued, another vaginal examination was made, and the cervix was still found to be only 2 cms. open. The membranes were artificially ruptured, and within nine minutes, a manual dilatation of the cervix was done, and a two-pound six-ounce stillborn baby, presenting by the breech, was extracted. The uterus and vagina were packed, and the patient was given glucose intravenously, but death occurred 2¼ hours after the extraction. Autopsy showed an extensive tear of the cervix.

Justifiable criticism is directed to: the use of a vaginal pack to control the bleeding in placenta praevia; the giving of 15 or 20 cc. of blood gluteally to replace blood loss, and to combat shock; the failure to call proper consultation; the delay in adequate and active treatment; and the manual dilatation and rapid extraction through the highly vascular cervix.

Table 2 gives the data relative to the placenta praevia deaths:

ABRUPTIO PLACENTA

Abruptio placenta was the cause of death in six patients, or 17.1 per cent. of the hemorrhage group, and 0.012 per cent. of the total reported

three of the women on the attendant. A typical case history follows:

A white, married, 23-year old para two, in her thirty-seventh week of gestation, while in the act of straining, had sudden abdominal pain, and fainting. Four and one-half hours after admission to the hospital, she showed signs of internal hemorrhage; fetal heart tones could not be heard. Three hours later, a consultant diagnosed abruptio placenta, and advised expectant treatment. Transfusion was given the next day, and on four subsequent occasions. On the fourth day, the patient developed sepsis. Medical induction by means of castor oil and quinine was attempted. This being unsuccessful, she was given on the next day fractional doses of pituitrin, getting in all 64 minims. This also failed to bring on labor. Two days later—the seventh day since admission—a bag was inserted, and failing, another attempt at bag induction was made on the ninth day, again without results. The patient during this time continued her septic course, and on the tenth day lapsed into coma, and died undelivered, eleven days after admission to the hospital. Permission was obtained to open only the abdomen: this revealed no rupture of the uterus.

The criticism here is that expectancy in treatment under the prevailing conditions was not good judgment.

TABLE 2
DEATHS FROM PLACENTA PRAEVIA

Para	Age	Bleeding began at	Operation	Adequate consultation	Wt.	Child Condition	Uterine pack	Treatment Trans-fusion	Intravenous fluids	Death hours after labor
1	23	35 weeks	Ces. Sect.	—	7-7	Living	—	+	+	6 days
1*	31	35 weeks	Man. dil. version and extraction	—	5-4	Still-born	—	+	+	3½ days
3	28	33 weeks	Man. dil. version and extraction	None	4-12	Living	+	+	—	4½
3	36	At term	Manual rotation and midforc.	+	?	Still-born	+	—	+	¾
6	43	37 weeks	Ces. Sect.	+	?	Still-born	—	+	+	5 days
7	24	31 weeks	Man. dil. version and extraction	None	2-6	Still-born	+	—	+	2¼
9	42	31 weeks	Braxton-Hicks version	+	?	Still-born	—	+	+	3¼

*This patient also had toxemia.

births, or once in every 8,610 labors. Three patients were primiparae, one was a para two, one a para three, and one was a para four; their ages ranged from 22 to 37. Prenatal care was considered adequate in two, and consultation adequate in three of the cases. Delivery was accomplished by operative means in each of the group. Two children were living, three were stillborn, and one remained undelivered. One patient died five minutes after labor, three died within one hour, and one died in three hours,—the average elapsed time being 11¼ hours; one patient died undelivered. The analysis as to prevent-ability placed the responsibility for the loss of

RUPTURE OF THE UTERUS

Rupture of the uterus was the cause of death in five patients, 14.3 per cent. of the group studied, and 0.009 per cent. of the total reported births, or once in every 10,332 labors. They were all multiparae, one of whom had had a previous cesarean section, and another who had a previous septic abortion. The age of one patient was 27, the others ranged from 30 to 37 years of age. Prenatal care was considered adequate in three cases, and consultation adequate in four cases. The rupture occurred during the first stage in four instances, and at the time of delivery in one case. Labor in all cases was ter-

minated by operative measures, and all of the babies were stillborn. Death occurred in three of the cases, 20 minutes, 10 hours, and 12 hours after the delivery, respectively, the average elapsed time being 7¼ hours. In one case, death came on the sixth day from paralytic ileus, and in another six weeks after labor, from sepsis. Four of the deaths were considered preventable, with the score against the attendant for faulty management, but in one of these, blame was also attached to the patient for lack of cooperation. In one instance, the husband, a drug clerk, gave the patient large doses of analgesics before entrance to the hospital. The history of this case is cited:

A white, married, 27-year old gravida seven, para three, gave a history of a tubal pregnancy with operation nine years ago, a cesarean section eight years ago, three induced abortions, and finally, five years ago, a labor, at term, with bag induction, Duhrssen's incisions, and midforceps. During some ten hours before

allowing a long, hard labor in a patient who previously had a cesarean section. Consultation and institution of proper treatment were too late.

INVERSION OF THE UTERUS

Inversion of the uterus caused the death of two patients, 5.7 per cent. of the late hemorrhage deaths. Both patients were primiparae, 25 and 29 years old, respectively; one had adequate prenatal care and adequate consultation. The birth of the baby was natural in both cases, one labor being of 14 hours' duration, and the other of 11 hours, and with a "Crede" expression of the placenta. Both had post partum hemorrhage. The babies were living, and weighed eight pounds six ounces, and eight pounds 12 ounces, respectively. In one case no diagnosis was made, no adequate treatment instituted, and death occurred four hours after the delivery. This case is considered preventable.

TABLE 3
DEATHS FROM ABRUPTIO PLACENTA

Para	Age	Operation	Adequate consultation	Wt. Child	Condition	Treatment		Death hours after labor
						Transfusion	Intravenous fluids	
1	22	Porro Ces. Sec.	+	?	Still-born	—	—	1
1	25	Ces. Section	+	7	Still-born	—	+	1
1*	30	Ces. Section	+	?	Still-born	+	+	5 minutes
2	23	Bag—twice	—	..	Undelivered	+	—	..
3	35	Manual dilatation, version and extraction	—	8-6	Living	—	+	3
4	37	Ces. Section	None	?	Living	—	—	1

*This patient also had toxemia.

admission of the patient to the hospital, the husband had given her three capsules of nembutal, two of seconal, four grains of codein, ten grains of aspirin, and five grains of phenacetin. On admission, she had a pulse of 90, temperature of 98, blood pressure of 120/70; there was 4 cms. dilatation of the cervix. The baby was in an ORA position, plus two station, and fetal heart tones were 160. Pains were strong, three minutes apart, and continued to be of this type. After 22 hours, the patient's pulse was 140, respiration 40, temperature 101, and she had nausea and vomiting. She was given ten per cent. glucose by vein. After waiting nineteen hours more, labor then having lasted about 48 hours, a consultant was called. He noted a sick patient with abdominal distention, absence of fetal heart tones, diagnosed a possible rupture of the uterus with peritonitis, and recommended laparotomy. At the operation, the uterus was found to be ruptured, the macerated fetus was lying outside of the uterus, there were multiple adhesions of the small bowel, peritonitis and hemorrhage. A Porro cesarean section was done, with ligation of the adhesions. The patient remained in poor condition and died 12 hours after the operation.

The physician is considered to be at fault for

The other case received supportive treatment, blood transfusions, intravenous glucose, and was operated on for reposition 37 days after the accident, but died from sepsis eight days later, six and one-half weeks after the delivery.

POST PARTUM HEMORRHAGE

Post partum hemorrhage was the cause of death in 15 patients, or 42.9 per cent. of the cases in this group. Of the total reported births, it formed 0.029 per cent. or once in every 3,444 labors, a figure very close to those shown by other investigators.^{1, 2} Only four of these women were primiparae; of the remaining 11, seven had had from three to nine children. The ages varied from 24 to 44, nine women being 30 years of age or older. Prenatal care was considered adequate in only five cases. The delivery was natural in seven; of the eight operative cases four had no obstetric indication for intervention.

Labor lasted from 2¼ hours to 14 hours in

ten cases; 16½ hours, 33½ hours, and 52½ hours, respectively, in each of three cases, and in two instances, it was not recorded. Consultation was considered adequate in six cases, too late in seven, and in two cases consultation was not sought. Of the 16 babies born—there was one set of twins—12 lived; one was stillborn; one was macerated, one was delivered by craniotomy, and one died neonatally. The placenta was removed manually in three instances where bleed-

ten-minute pains, 6 cms. dilatation, plus one station, membranes intact, an OLA position, and fetal heart tones of 138. Within three hours one rectal and three vaginal examinations were made. On the last examination dilatation was found to be complete, and the membranes were artificially ruptured. The pains were strong and five minutes apart, and labor was progressing satisfactorily. Three minims of pituitrin were given. A living, seven pounds and two ounce baby was born naturally four hours after admission. After a wait of 25 minutes, during which time there was an estimated loss of 250 cc. of blood, a manual removal

TABLE 4
DEATHS FROM RUPTURE OF THE UTERUS

Para	Age	Hours	Labor Operation	Indication	Adequate consultation	Child		Treatment				Death hours after labor
						Wt.	Condition	Hyst- erec- tomy	Uter- ine pack	Trans- fusion	Intra- venous fluids	
3*	27	48	Porro	Rupture	—	4-12	Macerated	+	—	—	+	12
3†	30	5 hr. 2nd stage	Kristeller, forceps, manual removal of placenta	Rupture	+	8-2	Stillborn	+	+	+	+	6 days
4	35	21	Low forceps	Rupture	+	8-8	Stillborn	+	+	+	+	6 wks.
6	37	80	Version and extraction; forceps on head	Transverse presentation	+	9	Stillborn	—	—	+	+	10
9	36	24	Version and extraction; man- ual removal of placenta	Impacted chin posterior	+	?	Stillborn	—	—	+	—	20 min.

*Had a previous cesarean section.

†Had a previous puerperal sepsis.

ing occurred before completion of the third stage; in one case it was removed without indication, and in another it remained undelivered. Other procedures of treatment varied, including the use of oxytocics, uterine packing, blood transfusions and intravenous fluids. In only three cases were all of these measures carried out.

In 12 cases, death occurred within seven hours after the delivery; in one instance, it was 14½ hours, and in two cases, death came five days after the labor, once from secondary anemia, and once because of sepsis. Omitting these last two cases, the average elapsed time between the labor and death was 4¾ hours.

A careful analysis as to the preventability of the fatal outcome shows that 11 of the 15 cases are to be classed as avoidable. In one instance the responsibility is placed on the patient, in one on the midwife, and in the remaining nine on the doctor, because of errors of judgment, errors in technique, failure to institute proper treatment, or failure to seek early and adequate consultation. The following case is cited:

A white, married, 35-year old gravida three, para two, was admitted to the hospital, at term, four hours after the natural onset of labor. She had seven- to

of the placenta was done, and the patient was given ergotrate and pituitrin. About three hours after the patient was brought to her room, the pads were found to be saturated, and she was given some whiskey, and her abdominal binder was tightened. By the end of another two hours, the bleeding was marked, the uterus was soft, and the fundus was three fingers' breadth above the navel. The patient's pulse was weak and rapid, her blood pressure was 74/30, she was clammy and in shock. Consultation was called, large clots were expressed, glucose solution was given by hypodermoclysis, and a transfusion unsuccessfully attempted. Adrenalin and oxygen were given, but the patient died 14½ hours after the delivery.

The suggestions that arise in relation to the better management of this case are: fewer vaginal examinations and omission of the use of pituitrin before the delivery—although these perhaps had no bearing on the outcome. The uncalled-for manual removal of the placenta, the use of whiskey and a tight binder to control an atonic uterus, the delay in consultation, the failure to pack the uterus, and to resort earlier to blood transfusion, are all errors in management.

Table five shows the data relative to the natural labors, indicating the parity, age, hours of labor, consultation, condition of baby, treatment, and interval elapsing from time of delivery to the death of patient. Table six, dealing with the

operative cases, gives similar data, and in addition shows the indication for and type of operative intervention.

SUMMARY

1. Death from late obstetric hemorrhage was more common in multiparae, occurring in 24 of the 35 cases.
2. It was more common in women past 30 years of age: twenty were in this group.
3. Only 13 of these mothers had adequate prenatal care.

22 placed upon the physician, because of failure to make the correct diagnosis, failure to seek early and adequate consultation, errors of judgment in treatment, or errors in technique. This ratio corresponds closely with that shown by the study of maternal deaths in New York City,³ and by the investigation in Philadelphia.⁴

CONCLUSION

Proper supervision of the expectant mother prenatally, and more particularly, adequate and alert management during labor, with early and

TABLE 5
DEATHS FROM POST PARTUM HEMORRHAGE IN NATURAL LABORS

Para	Age	Hrs. of labor	Adequate consultation	Child		Man. rem. of placenta	Uterine pack	Treatment		Oxytocics	Intra-venous Fluids	Death hours after labor
				Wt.	Condition			Trans-fusion				
1	29	?	None	?	Living	—	—	—	—	—	+	6
2	25	8¾	—	5-14	Living	+	—	—	+	+	+	5½
2	35	8¾	—	7-2	Living	+	—	—	+	+	+	14½
5	24	7½	+	?	Macerated	—	+	+	+	+	+	7
5	35	5¼	—	9-8	Living	—	+	—	+	+	+	3¾
8	34	2¼	+	8-4	Living	+	—	+	+	+	—	5 days
9	44	?	—	?	Living	—	—	—	—	—	—	1

TABLE 6
DEATHS FROM POST PARTUM HEMORRHAGE AFTER OPERATIVE DELIVERIES

Para	Age	Hrs.	Labor	Adequate consultation	Wt.	Child	Condition	Uterine pack	Treatment		Intra-venous fluids	Death hours after labor
									Trans-fusion	Oxytocics		
1	24	33½	Operation Low forc.	Indication 2 hour	+	7-1	Living	—	—	+	—	1¼
				2nd stage								
1	27	9	Midforc.	None	—	7-9	Living	—	+	+	—	4
1	30	52½	Midforc. then Craniotomy	Hydrocephalus	+	6-14	Dead	+	—	+	—	½
2	27	10½	Low forc.	None	+	6-12	Living	+	+	+	+	3
2	35	6	Low forc.	None	+	8-13	Living	—	+	+	+	4
3	35	14	1) Mid-forceps	Maternal fatigue	—	?	Died	+	—	+	+	4½
			2) Version and Extraction.		..	?	Living					
3	36	10	Low forc.	None	—	?	Living	—	—	+	+	7
5	30	16½	Dührssen's; Vers. and Extraction; forceps on head; man. rem. placenta	Transverse presentation	—	8-2	Stillbirth	+	+	+	+	5 days

4. Consultation was considered adequate in 17 of the 35 cases.
5. The mortality for the child in this obstetric complication was 50 per cent.
6. In 26 women death occurred within an average elapsed time of four hours after the delivery of the baby. In the other nine cases, where death was delayed from three days to six weeks, the final cause of the fatal outcome was sepsis in four instances, paralytic ileus in two, and secondary anemia, toxemia, and postoperative pneumonia, in each of three cases respectively.
7. Twenty-six of these deaths were scored as being preventable, with the responsibility for

adequate consultation, and with prompt treatment against blood loss by uterine packing, blood transfusion, intravenous fluids, and oxytocics, should materially reduce the maternal mortality due to obstetric hemorrhages.

BIBLIOGRAPHY

1. Beecham, C. T.: *Am. J. Obst. and Gyn.* 37: 258, 1939.

2. Stander, H. J.: *Williams' Obstetrics*, 1936, D. Appleton-Century Co., p. 1119.

3. Maternal Mortality in New York City: A Study of All Puerperal Deaths, 1930-1932, The Commonwealth Fund, 1933.

4. Maternal Mortality in Philadelphia, 1931-1933, Philadelphia County Medical Society Committee on Maternal Welfare, 1934.

310 S. Michigan Avenue.

Dr. Otto H. Crist, Danville: A paper like this should not go by undiscussed. One thing stands out

to me more than anything else and that is that it is the doctor's fault in the majority of cases. We preach prenatal care to the patient but in the majority of these cases adequate prenatal care was not given. In nearly all of them the fault was with the doctor. It seems to me time that we were centering our efforts on treatment these women are given by the profession.

Dr. Charles C. Rentfro, Chicago: Dr. Newberger's paper is the result of taking the work of a city and finding out what work is being done in that city. You know where there are a lot of men working independently it is hard to get the result of their work and it took a great deal of work on the part of various organizations to get together the details that he has presented today. Having served on the Maternal Welfare Committee since 1934, there have been many questions answered for me and one of the most important I can think of in connection with this is a co-ordination of all the work of the city so that it is available for us as a matter of information. We go along and see a number of lives lost but we do not realize the amount of lives lost until it is brought under one heading, as Dr. Newberger brought here today. Belonging to a staff of men who are in a hospital not for profit, dealing with private patients, it has been brought to my mind that the only way to control the work of these men is by having an organization in that institution that will look after the obstetrics that comes to it. We have staff meetings and talks on every case that has been lost so that these men can analyze the work that has been done. One of the worst cases Dr. Newberger mentioned happened in our hospital by an occasional visitor, and a day had gone by before he sought consultation. The men have to be brought under control and made to feel like getting consultations while there is yet time to help the patient. They must be made to feel as part of the staff.

I enjoyed Dr. Newberger's paper very much. I have gone over these deaths many times and I think they should be brought to us so that we may realize that we are responsible for most of the losses.

Dr. Gerald Cline, Bloomington: Of interest to me personally was the small number of transfusions given. In our community where we do not have a list of donors or a blood bank upon which we can rely at all times, I admit that transfusion is a more difficult procedure than in some of the large hospitals. In the last ten or fifteen years there have been more younger men equipped to do this work, but even so not enough transfusions are given.

Dr. E. N. Nash, Galesburg: I have been very much interested in this paper. I have just one question that I want to ask and that is relative to the management of abruptio placenta. The doctor is criticized for inadequate treatment and then in reading the literature we find two different schools of thought about the management of these cases. Some believe that we find a much lower mortality in cases allowed to deliver spontaneously. Certainly some of the cases Dr. Newberger presented could have been prevented by earlier operation by cesarean section. I would like to hear his

opinion as to the management of abruptio placenta.

Dr. Henry E. Irish, Chicago: I would like to say that this is one of the most constructive efforts I have ever heard offered in a section of the Illinois State Medical Society. I believe this type of keen analysis, pointing exactly to the thing that would and will improve the situation of a patient bleeding to death is definitely worth while. The regrettable fact about papers of this type is that the men who need them most are the men who do not come to the medical society meetings and these same men do not read the medical magazines. When and where the diffusion of this sort of information will stop nobody can know but the man who needs it the most will probably be least benefited. I repeat that this is one of the most constructive efforts I have heard offered.

Dr. Charles Newberger, Chicago: The first question about abruptio takes us too far afield for discussion. The treatment varies a good deal with the extent of premature separation, the condition of the patient and of the baby, the advancement of the period of gestation and, if the patient is in labor, the degree of dilatation and the station of the head.

Dr. Barrett's comments bring forth this particular thought, that the most difficult part of this study was to allocate the responsibility. This task was undertaken by a group of specialists in obstetrics and teachers of obstetrics. We discussed the facts of the case thoroughly before we decided that death was preventable.

The high score of 62.8 per cent. against the physician in this analysis corresponds closely with the preventable 61.1 per cent. charged to the medical group in the study of maternal deaths in New York City and the 56.5 per cent. scored against the doctor in a similar investigation in Philadelphia.

UNDULANT FEVER: ITS SOURCES, MODES OF INFECTION AND PROPHYLAXIS

JOHN F. SHRONT'S, M.D., M.S.P.H.

WOODSTOCK, ILL.

Medical Health Officer, Illinois Department of Public Health

Brucellosis, the name given to an infectious disease observed in man, goats, cattle, and other domesticated and wild animals, is derived from the term *Brucella*, applying to a group of bacteria. The disease was first observed and studied in man and goats of Mediterranean countries, more particularly of the Island of Malta. The League of Nations Health Organization adopted the name undulant fever for its official list of diseases when the Maltese objected to the unfavorable advertising that results from the name Malta Fever. Another designation, *Mediterran-*

ean fever, is objectionable because brucellosis is world-wide in distribution and occurrence.

There are at least three species of *Brucella* organisms, with a primary host for each: *Brucella abortus* of the cow, *Brucella melitensis* of the goat, and *Brucella suis* of the pig. Each of these species may infect various other animals and there may be two species present in a single host. Usually, however, each is found most frequently in its own primary host and is usually, but not invariably, the etiological factor in the peculiar brucellosis of that species. Bang's disease, or bovine infectious abortion are the names given to that form of brucellosis commonly found in cattle. Traum's disease is that form commonly found in swine infected with *Brucella suis*. *Brucella melitensis* of goats is common only in those regions where the milk goat is the main source of milk and its products. The species peculiar to goats is of minor importance in Illinois, except in those few instances where it has become the infecting agent for cattle or swine, and has been, in turn transmitted to man. Man has been found to be susceptible to all three species. In its clinical manifestations, as the disease affects man, there are no noteworthy differences to be observed in the infections resulting from the goat, cow or hog type of brucellosis. It has been observed, however, that man is more susceptible to brucellosis of goats and swine than to brucellosis of cattle. Some observers contend that brucellosis of goats and swine, as well as being more infectious for man, produces a more severe type of undulant fever than does the brucellosis of cattle. The case fatality rate for undulant fever is relatively low (about two per 100 cases) but it has been suggested that fatalities occur more often among persons infected with the swine disease than the cattle disease. Brucellosis in cattle is seen as a chronic inflammation of the reproductive organs and the udder of the cow. The organisms are particularly numerous at the time of parturition in the fetal and maternal placenta and in the aborted fetus. The belief that *Brucella* disease in swine and cattle is always an abortion disease is not so. Judging by the location of the organisms in the tissue of the naturally infected hog, the nature of the disease is a splenic lymphadenitis, and abortion in swine is only a sporadic occurrence. Among infected cattle, abortion can and does frequently occur, but certainly not always. Sterility sometimes

occurs, but neither of these signs may be present while a dairy herd may be heavily infected with Bang's disease.

It appears that it is very difficult to infect hogs with the *Brucella* organisms of cows or goats, but it is the *Brucella* organisms of swine that may naturally infect horses, poultry, dogs and cows. And, as stated above, it is to the swine organism that man has a relatively low resistance. It becomes apparent that further investigations should be undertaken to determine the extent and dangers of swine brucellosis as it infects man.

The usual reservoirs of infection—cattle, goats and swine—are generally recognized. That sheep, horses, mules, dogs, rabbits and poultry can be infected has been demonstrated, but there is no convincing evidence to show that these unusual hosts are dangerous reservoirs of infections. The important point is that there may be other possible dangerous reservoirs of the disease that have not been disclosed.

Recently the importance of human carriers has been pointed out. Carriers may be defined as persons from whom the organism can be cultured from the blood, urine, stools or spinal fluid. These individuals may or may not exhibit clinical signs of the disease. They constitute a relatively unimportant source of infection, as noted in a series of 845 persons who were positive to the intradermal brucellergen test. Of the 845 blood cultures made, only four were positive. In the same series 370 urine cultures were made and only two positives were obtained. There are few authentic cases recorded where the infection can be said with certainty to have been communicated from one person to another by direct contact. The disease is, however, a bacteremia and the fact that the organisms can be recovered occasionally from the urine and feces should suggest the adoption of the usual precautions for communicable disease control.

A not uncommon mode of infection is seen among laboratory workers who contract the disease by direct contact with contaminated material where, for example, blood from an infected person or animal may be splashed into the eye or carried by the finger to the conjunctiva. Infections of this nature are common enough to suppose that *Brucella* organisms are more invasive for man *in vitro* than *in vivo*.

The recognition and reporting of undulant

fever has followed a strong upward trend in Illinois during recent years. For the entire United States in 1924 the total number of cases reported was 24. For Illinois 107 cases were reported in 1937 and 212 in 1938. This upward trend has continued at an accelerated rate to date in 1939, so that there are, on an average, four cases reported every week in Illinois.

There is some evidence that the case rate of the disease is actually increasing, although this increase is more apparent than real. A consideration of the usual source of undulant fever—brucellosis in live stock—shows that it has been widespread and of great economic importance for many years. As early as 1917 several State agricultural experimental stations were estimating annual losses at \$20,000,000 in the United States from Bang's disease. In 1930 the estimated loss was \$50,000,000.

That the disease has been present among inhabitants of the United States for many decades there can be little doubt. Reports of so-called "typho-malarial" fever immediately after the Civil War are interpreted by some as being undulant fever. It is now supposed by some writers to have been a disease of antiquity. Ever since the time of Hippocrates a low type of fever characterized by regular remissions or intermissions has been recognized along the Mediterranean.

The seasonal incidence with an increase in the number of cases reported in the summer months has attracted attention to the possibility of transmission through an insect bite. Experimentally it is possible to infect monkeys as a result of mosquito bites, but these are probably instances of mechanical transference of the infection corresponding to a laboratory inoculation with fresh virulent material from a hypodermic syringe. The British Government investigators at Malta found *Brucella* organisms only four times from a total of 896 mosquitoes studied. The explanation for the greater number of cases reported during the warmer months may be the fact that among cattle raisers, breeding is so timed that calving occurs in the spring and to a less extent in the fall. With the animals becoming more infectious at the time of parturition and after, there is a greater danger of contact infection for both humans and other animals. Another explanation may be that the organisms find a

better cultural medium in the warmer raw milk of the summer.

It is now conceded by practically all investigators that the disease is transmitted to man from the primary hosts—goats, cows or hogs—by one of the following modes:

1. Through the ingestion of raw, contaminated milk, or one of its products.
2. Through the handling of discharges or the aborted fetus and its membranes of infected animals.
3. Through the ingestion of uncooked meats of infected animals, particularly uncooked liver and sausages.
4. Through contact with human carriers.

Attempts have been made on the part of dairy owners and advocates of unpasteurized milk to minimize the dangers of raw milk and its products. Nevertheless, this remains as one of the important sources of infection, if not the most important. Some conclusions may be drawn regarding the extent and incidence of the disease as well as the relative importance of the various sources of infection, from statistical studies. It has been shown frequently that the epidemiology of undulant fever varies from place to place, apparently exhibiting geographic differences. A statistical study was undertaken of cases reported in Illinois in the hope of revealing some epidemiological factors peculiar to the disease in our state. It should be noted that the apparent geographic differences are probably dependent upon the extent and kind of brucellosis prevalent among the live stock, whether cattle or swine, the extent to which milk pasteurization has been adopted and the occupations and relative immunity of persons exposed. Further, it should be noted that the prevalence of undulant fever is determined by the number of cases actually reported, and that case finding by this method is dependent upon the diagnostic acumen of practicing physicians.

Referring to the 252 cases reported in down-state Illinois for 1937 and 1938 we note that 64% were in males and 36% in females. This preponderance of male cases is characteristic of the disease and has been observed in practically all studies. A study made by the United States Public Health Service of 484 cases in 15 states in 1930 showed a ratio of three males to one female. In this report it was stated that 198 patients or 45% had no contact with live stock

or animal carcasses, and were, therefore, declared to be milk borne infections. In this group there were about equal numbers of male and female cases. By analogy, we may suppose that a similar condition exists in our own state; susceptibility is more nearly equal for both sexes if we eliminate the large male group that is exposed through occupation.

The handling of carcasses of infected animals and other occupations associated with the meat packing industry are supposed to constitute important and dangerous sources of infection. Yet the number of cases reported from Cook County and Chicago, with its large stockyards and meat packing centers, is not high. Only 16 cases or 7% of the total of 1938 were reported from Cook County.

The cases for Illinois show that 64% or two-thirds of the total fall within the ages of 20 to 50, yet only one-third of the general population falls within those ages. Nine or 3.6% were in persons less than ten years old. The youngest reported was two years old, and the oldest was 70.

Twenty per cent. were persons residing in towns of over 5,000 population, 40% in towns less than 2,500, and 40% were persons reported as rural inhabitants. In the United States Public Health Service series 66% were residents of towns of 5,000 or more and only 33% were rural or village inhabitants. This indicates that the incidence of the disease is much greater for the rural inhabitants of this state than case studies in other parts of the country would lead us to suspect. A contributing factor is, undoubtedly, the extent of pasteurization.

State Health Department workers made 296 epidemiological investigations of cases of undulant fever in 1937 and in the first ten months of 1938. As far as could be determined, and in the best opinion of the investigators, only 117 cases or 40% had had animal contacts that could be interpreted as a probable source of infection. The remaining 179 cases or 60% had had no animal contact and can be interpreted as due only to the ingestion of contaminated milk or meat, or due to contact with human carriers. There were only four cases where both the possibilities of animal contact and contaminated milk ingestion could be ruled out—cases that may be due to contact with human carriers. Of the 40% having animal contact, only 20 or 6% were not exposed to the possibility of infection

from contaminated milk. Any interpretation that is made of these figures leads to only one conclusion—that animal contact is not the major source of infection. In fact, only 40% of the cases can be explained on that basis. The other 60% are, in the light of our knowledge of undulant fever, either milk or food borne infections. This conclusion has been reached by numerous other investigators. Drs. W. R. and E. T. Roberts of Cissna Park, Illinois, reported a study of 78 cases of undulant fever that they had diagnosed and treated. Their article was published in the *ILLINOIS MEDICAL SOCIETY JOURNAL* of March, 1939. In a communication from Dr. E. T. Roberts he informed me that in their opinion it was the consumption of raw dairy products that usually introduced the infection. Dr. Paul Brooks, State Commissioner of Health, reported on 255 cases of undulant fever that occurred in New York State and concluded that nearly all of the infections were due to the use of raw milk from herds infected with Bang's disease.

In the United States Public Health Service report referred to previously, in which the majority of cases investigated had occurred in Iowa, there were found to be 45% of cases that had had no animal contact, and it was concluded that the most probable source of infection was raw milk. Another 45% of the cases were found to have had contact with live animals, and included farmers, veterinarians and live stock dealers. The remaining 10% consisted of packing house employees and butchers. In every instance the association was with pork or pork products, an observation that is worthy of note.

Case studies usually show but one case in a household. Generally speaking, cases of undulant fever are so scattered that it is unusual to find a group of cases associated with a common milk supply. Outbreaks have been reported, however, and the available evidence indicates that the infections are of the swine variety that have been contracted by dairy cows and transmitted through raw milk.

An analysis of the 252 cases reported in Illinois during 1937 and 1938 by geographic distribution shows 67% of the 102 counties contributing one or more cases. It is interesting to note that 23 of the non-reporting counties are in the southern one-third of the state. A division of the state into three areas shows the

case rate for the north one-third (except Chicago) to be 3.4 cases per 100,000 per year. The rate for the central one-third is 4.6 and that of the southern one-third 1.2. The three downstate counties contributing ten or more cases are: Woodford with 28, Montgomery with 17 and Iroquois with ten cases. Judging from these figures, it is the middle one-third of the state where undulant fever is most prevalent.

The State Department of Agriculture has been cooperating with the Federal Bureau of Animal Industry on a Bang's disease control program for Illinois. Since 1934, agglutination tests have been made on the blood of more than 448,000 cattle. Although positive reactors have averaged about 20% on initial tests, it is now estimated that 9% of the cattle in Illinois are infected with Bang's disease. Figures for 1938 on Bang's disease testing supplied by the Department of Agriculture on the three counties of the state where undulant fever is most prevalent do not show an excessive number of infected cattle. For Woodford County the per cent. is 9.7, for Montgomery 8.8 and for Iroquois 9.1. Apparently these figures do not demonstrate a correlation between the extent of undulant fever and Bang's disease in these communities. Other factors that must be considered in this relationship involve the extent to which pasteurization of milk has been adopted, and the prevalence of brucellosis among swine. It should be noted, however, that the agglutination test used in this testing program will show the presence of swine brucellosis in cattle when it is present, although no differentiation is made from brucellosis of cattle. We should realize, too, that when a physician becomes alert to the possibility of undulant fever in a community, he is apt to diagnose cases that he might otherwise miss. If all other factors are equal there is one explanation that may be offered to explain these foci of the disease: that we are dealing here with the more virulent and invasive organism of swine brucellosis which has invaded the dairy cows. Accurate figures on the extent of brucellosis among swine in this state are not available, although it has been estimated to be as high as 20%. Agglutination tests at a Chicago slaughter house revealed 5.6% positive reactors among 1,000 hogs tested. During 1935 there was no conclusive evidence to indicate a high prevalence of brucellosis among swine in these

three counties, with the exception of Montgomery County.

Wide discrepancies between the prevalence of undulant fever and Bang's disease have been shown recently in a country wide study, using State Health Department reports as a basis. The investigators, Gershenfeld and Butts, suggested that the extent of pasteurization of milk might be part of the explanation, but the possibility of swine brucellosis as a contributing factor was not mentioned.

Accurate figures on the per cent. of pasteurized milk consumed within a community are not available, although some estimates have been made by personnel of the Division of Sanitary Engineering of the State Health Department. In Woodford County, where the largest number of cases of undulant fever have been reported for the period under consideration, the amount of pasteurized milk available was strikingly low. Having only one plant to produce pasteurized milk in 1938, it is estimated that 2% or less of the milk consumed within the county was pasteurized. Conditions in Montgomery County were better where there were three pasteurization plants and an estimated 14% of the milk consumed was pasteurized. In Iroquois County there was only one pasteurizing plant and an estimated 7% of the total milk consumed was pasteurized. For the entire downstate area, the average number of pasteurizing plants is about $1\frac{1}{2}$ per county, so the three counties referred to fall appreciably below the average for per cent. of pasteurized milk consumed. At best these figures are only approximations and the evidence is only suggestive.

A small group of writers have attempted to show that undulant fever is contracted by means other than the drinking of raw milk because only 3% or 4% of the cases are seen among those who are the largest consumers of milk—children less than ten years of age. Other arguments that are advanced to show that animal contact is a greater hazard than raw milk ingestion point to the fact that the male sex is attacked twice as frequently as the female, and that the age curve in undulant fever shows the disease to prevail most commonly between the ages of 20 and 44 years. These variations in age and sex incidence can be more readily explained on the basis of immunity, rather than on the assumed basis of exposure and sources of infection. Ac-

cording to Topley's "Immunity and Bacteriology" the brucellosis infection of humans resembles in many respects that of tuberculosis. The organisms of both these diseases have a high degree of infectivity, enabling them to establish themselves in tissues, at least temporarily. Neither has a high pathogenicity, so that in the majority of persons the infection is a latent one, or it retrogresses. Latent infections in all probability confer a latent immunity, else the disease would be more prevalent among veterinarians. There is also evidence indicating that persons exposed to a heavy infection for the first time, or after a long interval of freedom from exposure, are more likely to develop the disease than those who are exposed to mild infections more or less continuously.

Careful studies have shown that latent infections are as common in females as in males, although the clinical disease is diagnosed more often in males. One explanation for this observation lies in the greater and continued consumption of milk among females, thus conferring immunity.

The similarity of brucellosis to tuberculosis is seen also in the interpretation of the diagnostic skin test, to determine the presence of an allergic state resulting from infection. This test using killed *Brucella* organisms or the nucleoprotein, has about the same significance as the tuberculin test, showing the presence of either a latent or active infection. In itself, the test is not diagnostic and its interpretation must be governed by the clinical findings, or other laboratory findings. The brucella opsonic test can be used to interpret the positive skin test indicating sensitization—whether it is an active infection or infection with questionable or complete immunity.

The agglutination test for the human disease is not highly accurate and may be negative in the presence of acute infection in as many as 20% or 30%. It does not become positive until two or three weeks have elapsed after the onset of the disease, and may be negative in a large percentage of chronic cases. It is not a specific test, and a positive reaction indicates merely the presence of one of the three types of brucellosis.

The agglutination test as applied to animals, using blood, has attained a high degree of accuracy and compares favorably with the tuber-

culin test for determining the presence of tuberculosis among cattle. The agglutination test using serum removed from the milk of cows is not more than 50% accurate as compared to the blood test, according to the State Department of Agriculture. The differentiation of the three species of *Brucella* organisms and disease types is made by observing the different cultural characteristics of the growing organisms.

CONCLUSIONS, AS INDICATING PROPHYLACTIC

MEASURES

The control program conducted by the State Department of Agriculture in testing, segregating and disposing of infected animals is a highly commendable project that should be vigorously pursued. That this applies particularly to our state is seen in the figures of the entire United States with an average of 4% of the cattle positive for Bang's disease. In Illinois 9% of the cattle are positive reactors. Observation has shown that when the number of cattle infected with Bang's disease can be reduced to 1% or less, the danger of spread to humans is practically nil. That the prevalence of Bang's disease can be reduced to 1% is entirely possible, as shown by intensive campaigns conducted elsewhere and in the results of the bovine tuberculosis control program with the number of positives less than 0.1% in our own state.

The danger of the introduction of the infection into a dairy herd may be present when an abortion-free herd is surrounded by infected herds, because drainage water has been shown to be a factor in the spreading of infections. In this situation, experience has shown that it is necessary to conduct agglutination tests as frequently as every 30 days to prevent the possibility of catastrophe in non-infected herds.

Unless swine are shown by agglutination tests to be free of brucellosis it is logical to suppose that they should be isolated from non-infected dairy herds. Evidence is accumulating to indicate that swine brucellosis is a source of the human disease that must be reckoned with whether its spread is directly to man or indirectly through dairy cows as intermediate hosts. The presence of the swine infection in man can be determined frequently by differential cultural methods if blood is taken during pyrexial periods and if careful techniques are carried out, according to Huddleson. Upon the relative number of cases of swine infection would depend

the advisability of extending the government's Bang's disease control program to include Brucellosis of swine. Until such time as eradication of the disease at its source is accomplished we must depend in part upon measures to prevent its spread. It is not necessary in this paper to again refer to the need for universal adoption of pasteurization. Numerous investigators have shown repeatedly that pasteurization is entirely effective in destroying the *Brucella* organisms. The fact that organisms may be harbored in cheese, cream or butter produced from raw milk is another argument in favor of pasteurization. When the milk used on a farm is obtained from infected cows or in the presence of suspected swine brucellosis, there is ample reason to advocate the boiling of milk. It appears that the danger is greatest at the time of parturition in the herd for the spread of milk-borne infections, as well as for dairy husbandrymen who are liable to exposure from direct contact. For the protection of the latter group, as well as slaughter house workers, there is need for education to the dangers of handling infected animals or tissues, particularly when wounds are present on the hands or arms. Some writers have argued that the use of rubber gloves or some other protection when abrasions or open wounds are present would prevent many cases of undulant fever among abattoir workers. The immediate disinfection of wounds, inflicted while working with possibly infected animals or tissues, appears to be a wise precaution. Since it has been shown that undulant fever may develop from a contaminated discharge or other infectious material that splashes into the eyes, such measures as the wearing of gloves, etc., may be futile. Two French workers, Dubois and Sollier, have been working with a vaccine to protect those persons who are constantly exposed by the nature of their occupation. The immunity appears to last no longer than six months to two years, and the vaccination is recommended principally for those who are exposed to the *Brucella* infection of goats.

The danger of eating uncooked meats of infected animals appears to be greatest in pork. Huddleson has particularly emphasized uncooked liver and sausage.

Isolation of undulant fever patients and the careful disinfection of discharges, wound exudates and all fomites should be practiced. Rose-

nau believes that the same precautions should be followed as in typhoid fever.

Laboratory infection of man should be combated by the adoption of a different attitude toward Brucellosis and a better technique in the manipulation of cultures and infective materials. Since the organism is not a spore producer and since it has no special protective properties, its resistance to disinfectants is comparable to that of the typhoid bacillus.

DISCUSSION

Dr. W. B. Oliver, Caledonia: Soon after I started practice three years ago, I saw my first case of undulant fever. That got me interested and I tried to find out all I could about the disease. One of the possibilities of mode of infection was the number of infected cattle in the district. So I began an investigation on all the farms when I called. I asked the farmers if they had abortion among their cattle and got positive answers nine times out of ten. I took this to mean a high incidence of Bang's disease among the cattle.

I watched for undulant fever very carefully, and it took me over a year to find another case.

I found three cases of undulant fever this winter. The first one was a young man aged 30, also the second; the third was an old lady of 84. I thought of the possibility of how the infection entered the body and checked back on these people. The first man had a peptic ulcer, and the second had an abrasion on his finger two weeks before he got the disease. It occurred to me, in talking with Dr. Shrouts, of the possibility of peptic ulcer making a person more susceptible. The old lady had a direct mode of entry in a chronic stomatitis starting about six months before she had the disease. All the cases were traced directly to the herds of cattle, and were in large family groups where the people were drinking the same milk and none of the others became infected.

Possibly the direct mode of entry might apply to the three above-mentioned cases, but today in consultation I saw another case of undulant fever in a young woman who had never touched other than pasteurized milk, eats no other dairy products and lives in the city. So, I do not know the answer.

Dr R. E. Logan, Galena: In Joe Daviess County there have been four cases in the last four years, and one of them is dead from this disease. I have been looking for one of these cases for a long time. In February of this year during the flu epidemic we had a lot of people who became ill. In the case in my practice the man had the flu but did not go to bed. After he had been up and around for several days he went to bed and stayed two days, then got up and went to work. Three weeks later I saw him again. He had been down the river fishing and got very wet. He came back with an acute severe cold. Fever developed. It did not act like the usual fever of the

so-called flu, except he had a terrific backache and also had a severe headache, but the backache was very marked. He also had bronchitis, and the symptoms resembled an upper respiratory condition. After thinking the thing over about ten days, I decided that we probably had a case of undulant fever. An agglutination test was done. The reaction was 1-460. This man was given a blood transfusion in November. To remedy the situation of his weakness he began drinking milk. It was non-pasteurized milk from a herd tested two years ago, from which all Bang's disease had been eradicated. The man bought some cows from another farm, where the cattle had been tested and did not have any reactors. One year later the second farm's cattle were all cleaned out because of Bang's disease, and the man our patient was buying the milk from, which was not pasteurized, has had no trouble with the cattle since or any calf trouble. But the milk was not pasteurized.

The question is, How can you tell what cattle do have the disease and how will you get rid of it if you do find it? The next thing is, Why did this man with a family of five, all of the children of whom had been drinking the milk steadily from the same herd for a long time, get it when no one else in the family got it?

The next thing Dr. Shronts said was that there are carriers, and it may be spread by carriers. I looked up undulant fever since I had my episode with this disease and I found this significant query in the *Journal of the American Medical Association*: "May this disease be spread by carriers?" The *Journal* answered, "We have searched the literature extensively and we find nothing to support the fact that it may be carried from one to another." I want to know if he finds authority for the fact that there is a carrier, that is carried from one patient to another.

Of course, the question of pasteurization of milk is one, in my opinion, that has to be met universally. In my case the man had eaten no raw meat of any kind and he drank practically no milk until he was given a blood transfusion. He handled no raw meat. He works in a foundry all the time. An apparently non-infected milk is without question the source of my patient's disease.

Dr. A. J. Levy, Chicago: During the winter I had two peculiar cases of undulant fever. They were unusual because the symptoms manifested by the patients were those of an upper respiratory infection, but the diagnosis of positive undulant fever was made only by laboratory test. The test was positive in dilutions of 1:640 to *Brucella abortus*. One case was that of a farmer's son, whose cattle were tested for Bang's disease. He assured me that not a case of animal abortion had occurred on the farm during the past two years, and that the cattle were retested recently. No positive reactor was found in the herd.

I would like to know if the speaker had any similar experiences with cases where the symptoms were limited to upper respiratory infection.

INTERAURICULAR SEPTAL DEFECT (PRIMITIVE OSTIUM PRIMUM) ASSO- CIATED WITH MITRAL STENOSIS (LUTEMBACHER'S SYNDROME) AND SYPHILITIC AORTITIS

J. D. KIRSHBAUM, M. D., M. S., and
LAWRENCE PERLMAN, M. D.

CHICAGO

Congenital heart disease in adults is rare, particularly when unassociated with clinical manifestations and when encountered as an incidental finding at necropsy. A series of 90 cases of congenital heart disease were encountered in 11,575 consecutive autopsies performed at the Cook County Hospital from 1929 to 1938 inclusive. Amongst this group there were 20 cases in patients over 21 years of age (see Table 1 for age groups). Of these, seven were cases of anomalous leaflets in the pulmonic and aortic valves; six cases of interventricular septal defect; five cases of patent foramen ovale; one case of patent ductus Botalli; and one case of patent interauricular septal defect (see table 1).

The total incidence of cardiac anomalies was 0.77 per cent., among which four cases of patent interauricular septum defect were encountered, constituting 4.4 per cent. of all the cardiac anomalies. Only one of the cases of interauricular septal defect occurred in an adult, the remaining three were among infants. In an analysis of 4,255 autopsies at the University of Pennsylvania Hospital, Rannels and Propst,¹ cite the incidence of cardiac anomalies to be 0.85 per cent. (omitting cases of patent foramen ovale), and of these they list no cases of patent interauricular septum. Szypulski,² in a series of 7,500 autopsies at the Philadelphia General Hospital, reveals an incidence of 1.48 per cent. of congenital heart cases, with only one case of interauricular septum defect. The incidence of cardiac anomalies in our series was much lower, but the occurrence of interauricular septal defects much higher.

Maude Abbot,³ lists 54 cases of defects of the interauricular septum exclusive of patent foramen ovale. Of these cases, 28 presented the defect as the primary lesion, while in 26 it was found associated with other defects in the heart.

Cases of interauricular septal defects are of

From the Department of Pathology, Cook County Hospital, and the Coroner's Pathological Department, Chicago, Illinois.

particular interest when associated with valvular lesions, the mitral valve being most frequent. Roessler,⁴ in reviewing the literature up to 1934 collected 62 cases of patent interauricular septum (excluding cases of small defects or complete absence of the interatrial septum), of which three-fourths showed associated valvular lesions, predominantly mitral in character. McGinn and White,⁵ presented 24 cases of interauricular septal defects with mitral stenosis. Both in Roessler's and McGinn and White's series the average age of death was 36 and 35 years of age respectively. The combination of auricular septal defect and mitral stenosis is now referred to as Lutembacher's Syndrome.⁶

EMBRYOLOGY

The occurrence of interauricular defects can easily be explained by a review of the formation of the interatrial septum.⁷ At the end of the fourth week of fetal life the atrial and ventricular portions of the heart are connected by the atrial canal. Two thickenings, or endocardial cushions, appear on the dorsal and ventral walls of the atrial canal. These thickenings meet in the midline and unite to form the septum intermedium, which divides the canal into the future right and left atrioventricular orifices. The

TABLE 1						
AGE INCIDENCE AND TYPES OF CONGENITAL DEFECTS FOUND IN 20 ADULTS						
Type of Anomaly.....	21-30	31-40	41-50	51-60	61-70	Total
Interauricular Septal Defect .....	..	..	1	..	..	1
Interventricular Septal Defect	1	2	2	1	..	6
Leaflet Anomalies of Pulmonary and Aortic Valves	1	2	3	..	1	7
Patent Foramen Ovale... ..	..	4	1	..	..	5
Patent Ductus Botalli... ..	1	..	..	..	..	1
Total	3	8	7	1	1	20

cavity of the primitive atrium becomes divided about the end of the fifth week by a septum, the septum primum, which grows downward into the cavity and unites with the septum intermedium. Communication between the atria is reestablished by the development of the foramen ovale in the upper part of the septum primum. A second septum, the septum secundum, now grows downward from the upper wall of the atrium, immediately to the right of the primary septum and the foramen ovale. Shortly after birth it fuses with the primary septum, closing the foramen

ovale. According to Abbot,⁸ a defect in the lower part of the interauricular septum (persistent ostium primum) is caused by a failure of the septum primum to descend and unite with the endocardial cushions. Associated with this is a dilatation of the pulmonary artery and a corresponding hypoplasia of the aorta.

REPORT OF CASE

R. M., a 47-year old white male became suddenly ill during the evening and died shortly after. He was pronounced dead on admission to the Cook County Hospital, thus expiring before a history or physical examination could be obtained.

At autopsy (performed by Dr. J. Kearns, Coroner's Pathologist), the cause of death was found to be a ruptured esophageal varix, associated with a cirrhosis of the liver.

The heart weighed 425 grams. The pericardial sac contained 100 centimeters of an amber colored fluid. The myocardium was pale brown-red in color. The left ventricle measured 40 mm. in transverse and 45 mm. in vertical diameters, and its wall measured 18 mm. in thickness. The right ventricle measured 85 mm. in transverse and 82 mm. in vertical diameters, and its wall was 5 mm. in thickness. The left auricle measured 63 mm. in vertical diameter and 105 mm. in circumference. The right auricle was 70 mm. in vertical diameter and 140 mm. in circumference. The wall of both the right and left auricle was one mm. in thickness. The free edges of the mitral valve were rolled and thickened. The papillary muscles were hypertrophied. The pulmonary artery measured 68 mm. in circumference while the aorta measured 55 mm. in the supravalvular portion. The aortic valve showed a fusion of the commissures, while the ascending aorta showed a marked deposition of fatty and hyaline plaques with a fine longitudinal wrinkling of the intima. In the upper portion of the interauricular septum, the foramen ovale presented a slit-like opening 2x9 mm. In the lower portion of the interauricular septum, three mm. above the mitral valve, there was a large 28x30 mm. defect in the septal wall (see Figure 1).

MICROSCOPIC EXAMINATION

The myocardium showed hypertrophy of the muscle fibers. The nuclei were oval shaped and the cross striations were distinct. There was an increase in the fibrous connective tissue between the muscle bundles. The vessels showed a slight thickening of their media. The aorta showed a marked thickening of the media and in some areas the fibrous tissue was replaced by hyaline plaques. There was an infiltration of lymphocytes within the media, most marked around the arterioles and the smaller blood vessels. The adventitia was thickened and also showed perivascular infiltrations of round cells. The intima was unchanged.

COMMENT

The description of the heart in the case reported is analogous to the classical description

of the heart in cases of patent interauricular septum previously reported. The anatomic findings are usually an enormous increase in the volume of the heart due to the dilatation and hypertrophy of the right side, a marked dilatation of the pulmonary artery and its branches, and a relatively small left ventricle. The dilatation of the pulmonary artery and the hypoplasia of the aorta usually emphasized was not present in our case, however; there was a difference of 13 mm. between the circumference of the pulmonary artery and that of the aorta. In a consecutive series of 100 cases of adults selected at random from necropsy, the average difference in circumference between the pulmonary and aortic ostii was only 3.3 mm. The average circumference for the pulmonary artery being 74.7 mm. and the aorta 71.4 mm. Taking into account the effect of the luetic infection upon the aorta in our case, one may assume that the increase in the circumference of that vessel was the result of the syphilitic process.

The physiologic pathology of interauricular septal defects with mitral stenosis has been well described by McGinn and White⁹: "Because of stenosis of the mitral valve the pressure of the blood in the left auricle rises. A considerable portion of blood passes through the interauricular septal defect rather than through the slit-like mitral valve. This blood passes from the right auricle to the right ventricle and thence to the lung for a second time. As a consequence of doing double duty, the right ventricle hypertrophies and the pulmonary artery dilates. The aorta, on the other hand, remains small and hypoplastic because it is receiving but a small amount of blood." In a similar manner the interauricular defect is increased in size due to constantly increased pressure within the left auricle as a result of the mitral stenosis. This causes the brunt of the increased work to fall upon the right heart which becomes dilated and its wall hypertrophied. The failure of the left auricle to dilate and hypertrophy subsequently to the mitral stenosis is due to the reduction and equalization of the pressure within the left auricle by the septal defect.

Interauricular septal defect in association with mitral stenosis is a rare condition. The superimposed syphilitic aortitis in our case was not present in any of the reported cases. The age of

death, 47 years, compares favorably with those previously described by Abbot,³ in whose 15 cases of primitive ostium primum the average age at the time of death was 18 years and the upper limit 46 years. The cause of death in our case which was cirrhosis of the liver with a resultant ruptured esophageal varix, can in no way be attributed to the cardiac defect. In the absence of the former condition the patient could have lived for many more years in view of the compensatory effect exerted by the luetic aortic insufficiency in the presence of the mitral lesion.

The other three cases in our series were found to be present in infants. The first died at the age of two months and in addition to the auricular septal defect showed a patency of the interventricular septum and common atrioventricular orifices. The second revealed an accompanying detortion defect of the heart and also expired at the age of two months. The third died when three months old and in addition to the auricular septal defect had a widely patent foramen ovale, a marked hypertrophy of the right ventricle and a truncus solitarius pulmonalis.

SUMMARY

A case of interauricular septal defect in a man aged 47, as an incidental finding unrelated to the primary cause of death, which was a ruptured varix and fatal hemorrhage, is here described.

The heart showed an ancient mitral stenosis and syphilitic aortitis. The association of interauricular septum defect and mitral stenosis has been described as Lutembacher's Syndrome.

Three cases of interauricular septal defect were encountered in 11,575 consecutive necropsies at the Cook County Hospital and one case in 6,000 consecutive necropsies in the records of the Pathologic Department of the Coroner's Office.

Congenital anomalies of the heart constituted an incidence of 0.77 per cent. in our necropsy material, of which 4.4 per cent. were interauricular septum defects.

BIBLIOGRAPHY

1. Rannels, H. W., and Propst, J. H.: Incidence of Cardiac Anomalies. *J. Tech. Methods* 17: 113, 1937.
2. Szypulski, J. T.: A Study of Congenital Heart Disease at the Philadelphia General Hospital, *J. Tech. Methods* 17: 119, 1937.
3. Abbot, Maude E.: *Atlas of Congenital Cardiac Disease*, American Heart Assoc., 1936.

4. Roessler, H.: Interatrial Septal Defects, *Arch. Int. Med.* 54: 339, 1934.
5. McGinn, S., and White, P. D.: Interauricular Septal Defect with Mitral Stenosis, *Am. Heart J.* 9: 1, 1933.
6. Lutembacher, R.: La Sténose Mitrale Avec Communication Interauriculaire, *Presse Méd.* 33: 236, 1925.
7. Gray's Atlas of Human Anatomy: Lea and Febiger Publishers 22nd Edition, p. 539.
8. Abbot, Maude E.: Osler and McCrae—Modern Medicine, 1908, 4: p. 349.
9. McGinn, S., and White, P. D.: Progress in the Recognition of Congenital Heart Disease, *New England J. Med.*, 214: 763, 1936.

OBSTETRIC ANALGESIA; ANESTHESIA AND AMNESIA

EDWIN NASH, M. D.

GALESBURG, ILLINOIS

From the time that Eve ate the apple woman has had to suffer pain at the time of delivery.

For many years there was no known way out. With the discovery of chloroform in 1842 there was offered at least a degree of relief.

People were loathe to accept this relief because the pain of labor was considered God given as a penalty for Eve's indiscretion.

As late as the reign of Victoria the Good many English women refused relief for religious reasons. Victoria, however, took chloroform in labor in order to show her people that relief was not sinful, because the Queen could do no wrong.

Until the turn of the century chloroform was the agent of choice for the relief of the suffering attendant upon childbirth.

Eether inhalations supplanted chloroform. Then Gwathemy brought forward his morphine, magnesium sulphate synergistic blend followed by rectal ether quinine and oil mixture. Nitrous oxide inhalation was used soon thereafter.

Later the various barbiturates took the center of the stage; these drugs were followed by paraldehyde per rectum and by mouth.

Cyclopropane and various other agents were employed, while some used local anesthesia.

PHARMACOLOGY OF CERTAIN BARBITURATES

All barbiturates produce varying degrees of hypnosis, narcosis or anesthesia according to the amount and type of the barbiturates used.

The more commonly used barbiturates may be divided into two groups: the shorter acting group consisting of pento-barbital sodium amytal, and the longer acting group consisting of pheno-barbital neonal and ipral.

A fall in blood pressure nearly always occurs.

In hypertension cases a marked fall in the systolic pressure has been noticed.

Large doses of barbiturates cause vasodilatation with flushing and even cyanosis lasting for some hours.

All members of the barbituric acid group depress the respiratory system if sufficient of the drug is given to produce deep narcosis.

The urinary output is said to be decreased for a few hours.

The shorter acting drugs produce death by respiratory paralysis, while the longer acting produce death by pulmonary congestion usually complicated by pneumonia.

Obese or debilitated patients do not tolerate the drug well. Then, too, there is the question of idiosyncrasy.

Certain objectionable features of barbiturates in obstetrics are the high percentage of cases showing extreme restlessness and maniacal symptoms even to the extent that patients require restraint. In sufficient dosages to produce hypnosis there is a respiratory depression; also cardiac depression. Rapid injection of barbiturates causes a sudden fall of blood pressure.

There is also noticed a depressant action on all smooth muscles with resultant increase in post partum gas pain. Loss of tonus is also noted in the ureter and urinary bladder, resulting in the necessity for more frequent catheterization following delivery.

In selected cases and in proper dosage, and when competent and incessant watching of the patient may be had, the barbiturates are fairly safe, but instrumental termination of the labor is much more frequently necessary than in those cases in which the drug is not used.

Morphine either alone or in combination with scopolamine is still the favorite method with many in the relief of pain in the first stage of labor.

Arthur Bill of Cleveland states that he has failed to find any anesthetic that is more satisfactory than morphine and scopolamine in the first stage of labor.

Morphine and hyoscine were used satisfactorily long before the Twilight Sleep craze swept the country by way of lay magazines early in the present century.

Morphine alone in our hands has proven the most satisfactory means of relieving first stage pains when such relief is necessary in those pro-

longed first stages, particularly occurring in cases with faulty presentations or positions.

Apnea in the babe is likely to occur if morphine is given under four hours from the time of delivery. However, if delivery is to be accomplished in less than one hour there will not be sufficient morphine in the baby's system to cause serious apnea. Occasionally apnea is marked if the morphine was given even more than four hours before delivery.

GWATHEMY SYNERGISTIC METHOD WITH RECTAL ETHER

The success of this method is absolutely dependent upon the cooperation of the patient and the technique in the administration.

What has been said about morphine and scopolamine as to the time of giving the medication applies here. The danger of apnea in the babe is the same. The method should not be used unless the woman is well into labor, and yet must be at least four hours off from delivery.

In other words it must be given in the first stage of labor when the head is engaged: considerable effacement and at least four cc. dilatation in primiparae. When to give it in multiparae is a more difficult problem. Every one is acquainted with the uncertainty of multiparae.

After the popularity of various other methods became established Gwathemy modified his method dispensing with the use of magnesium sulphate and substituting nembutal, grains three, in place of the morphine and adding paraldehyde, drams two, to the ether and oil mixture. However, the writer is of the opinion that if given in the first stage morphine is preferable to nembutal, and in the second stage one and one-half grains of nembutal are sufficient.

Recently a gravida (three) was given one and one-half grains of nembutal and the rectal instillation. She was apparently deeply narcotized; she did not use her abdominal muscles as an accessory expulsive force necessitating forceps delivery although both her other labors were entirely spontaneous. The labor was followed by coma of 20 hours' duration. During all this time her color was perfect: there was no change in pulse rate nor blood pressure and the blood picture was normal.

ETHER-OIL MIXTURE

Consists of:

Ether, ounces 2½.

Quinine alkaloid, 20 grains.

Alcohol, 45 minims.

Paraldehyde, 2 drams.

Olive oil or liquid petrolatum, enough to make 4 ounces.

1. It is the safest of all satisfactory analgesias used to date. Several series of many thousands of cases have been reported, no maternal or infant mortality being attributed to its use. The largest of the series is a group of 20,000 cases reported in 1930.

2. There are no major physical contraindications. It may be given with impunity to patients presenting cardiac disease, tuberculosis, pneumonia, acute bronchitis, nephritis, eclampsia, placenta praevia and pelvic disproportion. In the event of a pathologic condition of the rectum it is no more irritating than the soap-suds enema formerly used. It is used with equal facility in the home and in the hospital.

3. It serves as a satisfactory analgesic in 85 to 95 per cent. of cases. Most failures are due to faulty technic.

4. It requires but little equipment and experience and is readily administered by the general practitioner.

5. It can be started early in the first stage and administered any time during labor.

6. The patient is much more cooperative than in "Twilight sleep" or sodium amytal analgesia.

7. In addition to analgesia it affords a most gratifying amnesia, the patient rarely having more than a vague recollection of the labor.

8. The physician does not have to be in constant attendance, the average instillation being effective for from two to six hours.

9. It is not likely to prolong labor and not infrequently the second stage is shortened.

10. The baby suffers no ill effects.

11. It incurs no complications of labor or post partum pathologic condition.

12. Forceps deliveries are decreased in number, and lacerations are no more frequent than with other methods of delivery.

13. Mental and physical shock are lessened. Normal appetite is restored within a few hours following delivery.

14. It is relatively inexpensive, especially compared with nitrous oxide and ethylene gas. At wholesale costs the ingredients of the ether-oil mixture total only a few cents.

15. It dovetails excellently with gas and inhalation ether as adjuvants during the perineal stage and instrumentation, only 50 per cent. or less of the usual amount of ether being necessary. Chloroform should never be used in conjunction with the method.

17. In performance a cesarean section under local anesthesia it affords an excellent preliminary.

18. This form of analgesia is available to practically every woman in labor.

Paraldehyde

Paraldehyde has probably the lowest toxicity of any analgesic used in obstetrics. However, it is not entirely free from danger to weak or premature babies.

Autopsy in neonatal deaths has shown the odor of paraldehyde in the tissues.

Restlessness to a lesser degree than in the case of barbiturates is present and sideboards may be needed.

There seems to be a variety of opinions among the several writers as to the frequency of the necessity for operative deliveries.

Morphine or pantopon or a barbiturate is needed as an adjuvant.

Objections to the use of paraldehyde are: the disagreeable taste if given by the oral route, together with the vomiting caused; irritation of the colon when given per rectum; restlessness during contractions; and the fact that in weak or premature infants the anesthetic may increase the mortality.

Inhalation Anesthesia

Inhalation anesthesia may be necessary in the terminal part of the second stage.

Nitrous oxide and oxygen or ethylene cyclopropane may be used not only here but also in the first stage. Its advantage is the rapidity of administration and the fact that the gases do not decrease the force of contraction. However, the gases should only be given by an expert and then with a standard apparatus.

If complete relaxation is desired ether by the open drop method is the anesthetic of choice, or cyclopropane may be given though the relaxation is probably not as complete as that of ether. In cardiac cases ether is still preferable, though many are now advocating cyclopropane.

Local Anesthetic

PUDDENDAL BLOCK

This method relaxes the levators of the lower $\frac{1}{3}$ of the vagina and the muscles of the perineum so that ironing of the perineum is unnecessary and episiotomies may be much smaller than in cases where the method is not used.

Repair of the episiotomy may be made without any inhalation anesthetic.

Simple infiltration will give considerable degree of anesthesia but there is not the amount of relaxation obtained that there is by the block method.

It is our practice to use the pudendal block routinely, no matter what method of analgesia has been used.

TECHNIC OF INJECTION

With the patient in the lithotomy position, the inner margin of the tuberosity of the ischium is located. Usually a point on a line with the anus, but 2 cm. medial to the tuberosity is the best site of injection. The tip of the needle is inserted and directed outward to the surface of the tuberosity where about 10 cc. of a $\frac{1}{2}$ per cent. novocain solution is injected. The needle is in constant motion to avoid intravenous injection. The needle is then withdrawn about half way and redirected toward the spine of the ischium, which is easily palpated with a finger in the vagina. Here another 10 cc. is injected. Aspiration must be tried before injection to be certain that the needle is not in a blood vessel. The same procedure is then followed on the opposite side. In a period varying from one to five minutes it will be found that the lower third of the levator muscles and the perineal muscles have relaxed so markedly that the fist can be placed in the vagina. The needle found most satisfactory has been a 21-gauge needle about three inches long and with a guard at the shank of the needle to obviate loss of the needle in case of breakage.

TIME FOR INJECTION

The best time for injection is when the patient is ready for delivery, with the head on the pelvic floor; the duration of the anesthesia is only about one and one-half hours.

When patients are not under the influence of one of the various methods of semimarcosis it is possible to deliver and repair the perineum without anesthesia, although anesthesia of the perineum is not complete. Because of the restless-

ness induced by hyoscine or the barbiturates, it is advisable to give these patients a small amount of gas or gas ether at the time the head is coming through the perineum rather than cope with a moving, restless patient. As soon as the head has been delivered all anesthesia is stopped and the repair is then done without additional anesthesia.

In conclusion I wish to emphasize the point that after all, these women come to us for the express purpose of having a normal babe and that the babe is entitled to have a healthy mother. Analgesia must be a secondary consideration.

Articles in lay magazines should not influence the obstetrician.

There is no perfect method of relieving the pain incidental to labor.

If any analgesia or anesthetic is to be used it is better to select the type according to the case in hand than to apply a routine method for all cases; bearing in mind the peculiarities of the patient, the obstetric diagnosis and the stage of labor.

BIBLIOGRAPHY

1. Gruber, Charles M.: A. J. O. and G. May, 1937.

DISCUSSION

Dr. Edwin J. DeCosta, Chicago: It is most important to reemphasize the very sane conclusions of Dr. Nash's excellent presentation on obstetrical analgesia. Primarily, we are concerned with delivering a healthy baby to a healthy mother. Pain relief itself, while desirable, must be secondary to this premise. If the pain is to be truly relieved, the patient must be medicated to a degree approaching anesthesia and under these conditions, cessation of labor pains occurs more frequently than many writers on the subject admit. The truth of this statement is attested by the presence of quinine in the ether-oil mixture of Gwathmey, to prevent inertia, and the constant advice of the various authors that medication is best instituted only when pains recur regularly every two to three minutes and the primiparous cervix is dilated 4 to 5 cm. Uterine inertia is a danger to the mother and baby and an exasperation to her doctor.

I think the danger of morphine is overemphasized. Not that morphine does not depress respiration, but rather that we have means at our disposal of readily and simply combating this depression. I refer to the use of the tracheal catheter. Most authors acknowledge morphine as the most effective analgesic agent we possess. It is ideal during the first stage and, with the fear of fetal apnea removed, it is ideal during the second stage.

The action of morphine may be complemented by the use of a variety of preparations, including scopolamine, chloral hydrate, paraldehyde, the barbiturates or even local anesthesia.

Each patient, as Dr. Nash emphasized, presents a problem peculiar to that individual. No one can foretell the patient's response to medication. This is especially true with the barbiturates. While the percentage of amnesia is high, so too is the percentage of restlessness. There have been enthusiastic reports of the use of nembutal in the home, the husband nursing the wife, the doctor often not present during the first stage of labor. Yet, even in the hospital and with special nurses, patients have suffered real injury.

How can one physician or group of physicians become satisfied with a given procedure while another physician or group of physicians is equally dissatisfied? The answer rests, I think, in familiarity with the action of the medication and facilities to meet all problems that may arise from its usage. With that arrangement I believe almost any combination of drugs can be made to give satisfactory results. Dr. Nash favors ether oil mixtures, and I am sure his organization is trained in its administration. He knows its indications, its limitations and understands its action. His results are very good. I prefer morphine augmented by small doses of paraldehyde by mouth. The unpleasant taste and smell of paraldehyde can be avoided by the use of gelatin capsules, and the dose will vary from 4 to 30 cc., depending on the patient's response and the duration of labor. I think I understand the behavior of these drugs and their limitations. I am satisfied with my results, but we both have failures. The very multiplicity of drugs and technics of itself indicates that there is no universally satisfactory procedure. What we need is a harmless method of pain relief that any one can employ anywhere. At the present time the closest we come to this is the employment of local anesthesia, either by parasacral or pudendal block. Unfortunately it is only valuable during the end of the second stage of labor and its action is short. However, the technic is very simple, the risk nil, and while not narcotizing the patient, local anesthesia affords a great deal of relief when it is most needed.

There are few who advocate the routine use of any method of pain relief. This seems particularly true in dealing with multiparous patients. Thus the problem resolves itself into the question, "With this particular patient, is it advisable to attempt to relieve the discomfort of labor and, if so, what shall we do?" You have heard the pros and cons of the various methods popular at the present time. There is no perfect method. However, almost any one of the many methods mentioned will give you satisfactory results if you are completely familiar with the action of drugs used and if you have available facilities for handling any problems that might arise.

Dr. J. E. Stoll, M. D., Chicago: I have been very much interested in the comments and remarks on this subject published in the lay magazines. To defend ourselves, we as a profession should get someone to write or talk for us in articles which would make clear the situation to the laity.

If you care to go back to the first issue of the Journal of the American Medical Association, you will find that new drugs appear in cycles. One that still remains is ether and one that is being talked down is chloroform. Ethylene, first mentioned in 1849, did not reappear again until about 1923.

We must remember the dangers and advantages of these drugs to mother and baby. I feel that these obstetrical agents should not be used without adequate assistants to take care of any conditions that may arise.

I was hoping to hear more about the methods and results obtained from these "obstetrical helpers" of today.

A doctor who was graduated from Rush Medical College fifty years ago told me they used none of these things when he was studying obstetrics. The doctor sat at the patient's bedside and talked to her, and I think that this did the patient as much good as many of the present day drugs.

In the terrible rush in which we live we may, some day, be able to get back on the old footing so that the patient will have confidence in us instead of in a lot of drugs.

It has been emphasized that every patient and every drug should be individualized.

Dr. Edwin N. Nash, Galesburg (in closing): Of course, it is fine when you can get the confidence of the patient. There is no question but that a great deal of the anxiety during childbirth is due to the mental state. I remember one of the most difficult cases I had when, after it was all over, the patient told me her whole trouble was fear; her first labor had been a severe ordeal and she was scared to death, being ten years older.

There might be a word added concerning these analgesics in relation to heart disease. The barbiturates do not do well there. When you come to inhalation anesthesia, I think that ether is still the safest inhalation anesthetic for cardiac patients, although we have used cyclopropane with good results.

YOUR TITLE IS "M. D."

There is widespread abuse of the title "Doctor." Legal procedures have failed to correct the situation. We have attorney general's opinions, opinions from the State Board of Registration in Medicine, offers of co-operation from the Department of Health, the county prosecutor's office, etc., etc. Some results are obtained in specific instances, but a violation must occur before action can be taken. Let us as physicians, endowed with the degree M. D., start to place emphasis on that degree. No one else can use it. Use *M. D.* in your speech, in your correspondence, on your signs, prescription pads, bill heads, etc. Gradually the public will start to discriminate. In this positive way we can gradually but most effectively offset the parasitical influence of so-called "doctors who are not M. D.'s. At the same time we can continue to refer specific abuses to the proper authorities.—Detroit Medical News.

EVERYBODY NEEDS A QUALIFIED PHYSICIAN AND A RELIABLE DRUGGIST

The Committee on Medical-Pharmaceutical Relations of the Fulton County Medical Society is to keep the two professions in this county in a close working relationship for the benefit of the two professions and for the benefit of the patients whom they serve. The two professions have worked harmoniously thus far but there are no doubt complaints not known by the physicians and likewise some which are not known by the druggists.

TEN RULES TO BE OBSERVED

(1) Physicians should write all prescriptions and not leave the patient to call for a proprietary product. The patient may call for the wrong medicine. He gets the habit of self-medication and the physician is hurting himself, the pharmacist and the patient.

(2) The physician should send his patient only to reliable pharmacists for filling prescriptions, one in whom he has confidence and should always mention the names of more than one druggist. There are ethics to be kept by physicians toward pharmacists as well as toward each other. The physician should know that the pharmacists he recommends are registered, that the prescription will be filled with the utmost care and accuracy and from the purest drugs. This will encourage all druggists to maintain the highest standards of service and gradually eliminate the unscrupulous pharmacists. Remember the patient's life is in the hands of the pharmacist as well as the doctor and the two must be careful.

(3) Physicians should prescribe only national formula and United States Pharmacopeia drugs. A written prescription should be given every patient even when a proprietary is listed.

(5) Physicians often give patients samples of medicine. There may be a few patients to whom this is a great saving but certainly should be condemned if pursued to a large extent. It makes the patient feel you are perhaps trying it out on him and it certainly is not fair to the pharmacists.

(5) Counter prescribing is unethical and illegal if the patient presents a problem for diagnosis but if the patient calls for a proprietary medicine, it is not unethical for a pharmacist to sell to him unless the potentialities of the drug would make it dangerous for the patient. Counter prescribing is not indulged in by reliable and ethical pharmacists.

(6) Physicians should write "N. R." on prescriptions which are not to be refilled and pharmacists should telephone the doctor whenever a prescription is repeated too often, particularly for certain drugs.

(7) The writing and filing of narcotic prescriptions is of equal liability to physician and pharmacist. The law requires a pharmacist to have a properly signed prescription from the physician prescribing for every prescription containing narcotics. A physician cannot legally telephone a prescription for a narcotic, neither is it legal for a pharmacist to take it over the phone.

(8) The price of the prescription is the business of the pharmacist. He would not attempt to put a price on the physician's fee, neither should the physician on

his. The physician does not know the price of the prescription and should not remark on it.

(9) Select your druggist with care. His job is an important one. He must know what he is doing and you should know that he is a registered pharmacist, licensed to fill prescriptions.

(10) The doctor should write the prescription legibly, the amount of each ingredient and whether or not it is to be refilled. He should explain to his patient something of the prescription and what it is for, whether it is to be refilled, and refer him to one or more reliable druggists to have it filled.

The main object of both professions should be to work for the health of the patient with a mutual confidence between the two professions.—Fulton County Medical Society Bulletin.

SOCIETY HAS AN OBLIGATION, TOO

"The general public has little realization of the tremendous amount of effort expended annually by individual physicians and by organized medicine in combating pernicious legislative measures sponsored by misguided enthusiasts and by those with ulterior motives. There isn't a legislature in America which does not annually have bills presented for consideration which would, if enacted, destroy health protection. . . . The opposition of medicine to such measures is based on its obligation to protect the public health, and to protect scientific and clinical investigation into the nature of disease.

"In its opposition to measures that threaten the public welfare, medicine employs no lobby . . . To accomplish its purpose, it must depend . . . on the influence of enlightened public opinion. American facilities for medical care are unsurpassed but much remains to be accomplished before the ideals of medicine are realized. In their realization, society has obligations no less than those of medicine."—Dr. William H. Homes, of Northwestern University Medical School, brings home an important point.

"BE ON GUARD"

(Monthly Editorial Prepared by the Medical Advisory Committee)

Medicine is in the limelight. The public eye is focused on medical practice and medical men. Physicians and hospitals are being censured for the type of medical care which has been and is being given the people, especially those in the low income group.

Your Medical Advisory Committee finds that the great majority of the cases brought against members of our Association and reported to the committee come from the so-called indigent group.

It is easy for a lawyer to build up a case about this type of patient, sympathy is easily raised, and juries are readily swayed to give substantial verdicts.

Your Committee warns you against any apparent neglect or indifference to them. Guard your words of advice carefully. Give the same careful consideration to their needs as you would to the man who can pay the highest fee, and keep records.

Remember, once having assumed the care of a case,

you must continue attendance until discharged by the patient, until the patient has recovered, or another man has assumed the care with the consent of the patient or legal guardian.—Minnesota Medicine.

Society Proceedings

COMING MEDICAL MEETINGS

October 10—Effingham County Medical Society—6:30—Benwood Hotel, Effingham—Dr. Samuel J. Fogelson—"Treatment of Gastro-Duodenal Ulcerative Disease Based on Modern Physiology."

October 10—McLean County Medical Society—6:30—Illinois Hotel, Bloomington—Walter Boothby, M. D.—"Newer Developments in Oxygen."

October 10—Bureau County Medical Society—6:00—St. Margaret's Hospital, Spring Valley—Dr. Chauncey C. Maher will speak on "Diagnosis and Newer Methods of Treatment of Pneumonia."

October 11—Union County Medical Society—6:00—Anna, Illinois—Dr. E. W. Cannady will speak on "Paroxysmal Auricular Fibrillation."

October 12—Fulton County Medical Society—6:30—Elks Club, Canton—Dr. LeRoy H. Sloan will speak on "Neurology for the General Practitioner."

October 17—Bureau County Maternal Welfare Program—Perry Memorial Hospital, Princeton—6:30—Dr. William B. Serbin—"Pernicious Vomiting and Nephritic Toxemia and Treatment of Toxemia and Eclampsia."

October 19—Tri County Medical Society—4:00 P. M.—Y. M. C. A. Building in Kewanee and 6:00 P. M.—Parkside Hotel, Kewanee. All Iowa State program presented by Dr. N. G. Alcock—"Value of Urological Findings in Diagnosis of Abdominal Tumors"; Dr. H. D. Kerr—"X-Ray Treatment of Malignancies"; Dr. F. R. Peterson—"Malignancies of the Large Bowel and Rectum."

October 24—Shelby County Medical Society—6:00—Shelbyville—Dr. Carolyn MacDonald will speak on "Value of Prenatal Care."

October 24—Rock Island County Maternal Welfare Program—Lutheran Hospital, Moline—8:30 P. M.—Dr. R. A. Black will speak on "Upper Respiratory Infection."

November 2—Southern Illinois Medical Meeting—Mount Vernon—all day and evening meeting—Philip Kreuscher—"Fractures of the Hip"; James H. Hutton—"The Endocrines"; Clifford Grulee—"Pediatrics"; David S. Hillis—"Forceps Delivery"; Charles Edwin Galloway—"Obstetrics."

November 3—Madison County Medical Society—Heart Clinic and Demonstration, scientific program presented by Robert S. Berghoff, assisted by Dr. Angelo S. Geraci.

November 6—Kewanee Physicians' Club—6:00—Kewanee Public Hospital.

November 7—Vermilion County Medical Society—6:00—Danville, Wolcott Hotel—Dr. Charles Edwin Galloway will speak on "Obstetrics."

November 9—Union County Medical Society—6:00—Anna, Illinois—Dr. Leo K. Campbell will speak on "Recent Advances in Management of Diabetes."

November 14—Effingham County Medical Society—6:30—Benwood Hotel, Effingham.

October 12—Kankakee County Medical Society—8:00 P. M.—Arcade Building, Kankakee—Speaker on "Pneumonia."

October 13—Will-Grundy County Medical Society—12:00 Noon—Louis Joliet Hotel, Joliet, Illinois.

October 31—Iroquois County Medical Society—Evening meeting—Watseka, Illinois—Dr. LeRoy H. Sloan will speak.

November 14—Effingham County Medical Society—6:30—Benwood Hotel, Effingham—Dr. George DeTarnowsky will speak on "Breast Tumors."

November 2—Lawrence County Medical Society—7:00—Hotel Laurence, Lawrenceville—Dr. James H. Hutton will speak on the "Classification and Management of the Nervous Hypotensive Case."

November 3—Winnebago County Medical Society—Noon Luncheon—Rockford—Dr. M. H. Kronenberg will speak on the "Practitioner's Approach to Industrial Hygiene."

November 2—Sangamon County Medical Society—8:15 P. M.—Elks Club, Springfield—Dr. Vernon David will speak on "Carcinoma of the Sigmoid and Rectum."

ALL-DAY CLINICAL CONFERENCE

Jacksonville, November 9

Doctors of the state are cordially invited to attend an all-day clinical conference at Jacksonville, Illinois, Thursday, November 9, at the Dunlap Hotel.

This is the first of a number of postgraduate courses being offered to doctors of the state and sponsored by the Scientific Service Committee, Dr. Robert S. Berghoff, Chairman, and the special Post-Graduate Education Committee, Dr. R. R. Ferguson, Chairman, appointed last spring.

The local chairman of arrangements is Dr. F. Garm Norbury and Dr. George L. Drennan, President of the Morgan County Medical Society, will preside at the sessions.

The following program has been arranged:

Morning

9:30—Heart Disease—Dr. Robert S. Berghoff, Chicago.

10:15—Discussion—Dr. Harry A. Durkin, Peoria.

10:30—General Surgery—Dr. Warren H. Cole, Chicago.

11:15—Discussion—Dr. Charles L. Patton, Springfield.

11:30—Dermatology—Dr. Cleveland J. White, Chicago.

12:15—Discussion.

Intermission for Luncheon

Afternoon

2:00—Orthopedic Surgery—Dr. Philip H. Kreuscher, Chicago.

2:45—Discussion—Dr. George W. Staben, Springfield.

3:00—Pediatrics—Dr. Julius H. Hess, Chicago.

3:45—Discussion—Dr. A. J. Fletcher, Danville.

4:00—Public Health—Dr. Howard J. Shaughnessy, Chicago.

Discussion—Dr. John P. Walsh, Greenview.

6:00—Dinner Meeting at Hotel Dunlap.

Evening Program

7:30—Endocrinology—Dr. James H. Hutton, Chicago.

8:15—Discussion—Dr. Orville Barbour, Peoria.

8:30—Obstetrics—Dr. Frederick H. Falls, Chicago.

Discussion—Dr. Milton E. Bitter, Quincy.

Further details as to the program or arrangements may be secured from Doctor F. Garm Norbury at Jacksonville or Doctor Robert S. Berghoff, 30 North Michigan Avenue, Chicago.

Marriages

JOHN MILES KRUPKA, Berwyn, Ill., to Miss Evelyn Phyllis Kotrba in Chicago, August 2.

ANDREW J. TOMAN, Chicago, to Miss Emily Marianne Serhant of Berwyn, Ill., in Oak Park, Ill., in June.

JOSEPH E. WALTON, Homer, Ill., to Miss Wanda Lee Lorton of Shumway, June 12.

Personals

At the St. Louis meeting of the A. M. A. Dr. Roy E. Brackin presented a paper on a new method of Uretero-Intestinal Anastomosis with Utilization of Peritoneum (Latent Demonstration).

Doctor William J. Morginson of Springfield addressed the Christian County Medical Society, September the 6th, on "Diagnosis and Treatment of Some Common Skin Diseases."

Dr. Archibald Hoyne will address the Kankakee County Medical Society at Kankakee, September 14, subject: "Scarlet Fever."

Dr. Roger T. Vaughan will give a paper on "Differential Diagnosis and Treatment of Acute Abdominal Lesions," before the Bureau County Medical Society, September 12, Princeton.

Dr. James Graham and William Morginson, of Springfield, addressed the Greene County Medical Society at Carrollton on September 8, subjects: The Orthopedic Aspects of the Foot," and "Fungus Infections of the Foot."

Dr. James H. Hutton has returned from Honolulu where he saw a number of endocrine cases for Dr. Nathaniel Benyas. He also attended the meeting of the Pan-Pacific Surgical Congress.

Dr. Nathan S. Davis III, will address the Adams County Medical Society at Quincy, September 11.

Dr. Frank G. Norbury, of Jacksonville, addressed the staff of the Schmitt Memorial Hospital, Beardstown, September 6, subject: "Acute Infections of the Central Nervous System."

Dr. S. W. Becker addressed the Palos Heights Woman's Club on September 5.

Drs. Guy M. Cushing and Chauncey C. Maher, Chicago, addressed the Henry County Medical Society, Kewanee, August 24, on "Acute Perforating Gastric and Duodenal Ulcers" and "Cardiorenal Disease with Emphasis on Renal Conditions" respectively.

Dr. Howard A. Lindberg, Chicago, director of the pneumonia serum center for the state department of health, addressed the Rock Island County Medical Society September 12 in Moline on the pneumonia control program.

Dr. Erik Hedvall, director of the University Tuberculosis Clinic and assistant professor of tuberculous diseases, University of Lund, Sweden, will address a joint meeting of the Institute of Medicine of Chicago and the Chicago Tuberculosis Society at the Palmer House September 22. His subject will be "How Does Pulmonary Tuberculosis Begin in Adults?"

Dr. Carolyn MacDonald addressed the Coles-Cumberland County Medical Society on "The Importance of Pre-Natal Care," and a public meeting sponsored by the Charleston Woman's Club on September 28.

Dr. Elias Selinger gave a talk on "Some of the Things the General Practitioner Should Know About the Eyes," before the LaSalle County Medical Society at Ottawa on September 26.

Dr. A. F. Lash gave a program on "The Prevention and Treatment of Abortion," before the doctors of the Rock Island County Medical Society at St. Anthony's Hospital, Rock Island, on September 26.

Dr. Adrien Verbrugghen gave a paper on "Neurology," before the doctors of the DeKalb County Medical Society in DeKalb on September 28.

Dr. Laurence E. Hines addressed the Lions Club of Galena on September 28, subject "You and Your Heart." He will also address the Jo Daviess County Medical Society that evening on the subject of Heart Disease.

Dr. Robert S. Berghoff addressed the doctors of the Cass County Medical Society at Rushville

on September 20. The meeting is to honor doctors of that county who have been in the practice of medicine for fifty years.

Dr. William J. Dieckmann gave a demonstration and lecture on Home Delivery Technique before the Coles-Cumberland County Medical Society on September 20.

Dr. Conrad Sommer addressed the DuPage County Medical Society on the subject of "Mental Hygiene," September 20.

Dr. Guy S. Van Alstyne and J. J. Callahan presented a scientific program before the Lee County Medical Society at Dixon on September 21, subjects: "The Management of Breast Tumors" and "Fractures About the Elbow."

Dr. Carlo S. Scuderi presented a program on fractures before the Fulton County Medical Society at Canton, on September 21.

Dr. M. Reese Guttman presented a paper on "The Diagnosis and Treatment of Middle Ear Complications" before the Scott County Medical Society at Davenport, Iowa, on Sept. 6, 1939.

Dr. Robert H. Herbst delivered two lectures and presided at a round table conference in Urology at the Rocky Mountain Medical Conference held at the University of Utah in Salt Lake City, September 5 to 8, 1939.

News Notes

—In the typhoid fever epidemic at Manteno State Hospital 51 deaths and 381 cases had been reported up to September 29.

—Several hundred workmen, who went on strike at the state hospital for the insane near Manteno because of the epidemic of typhoid there, returned to work September 6 after they were promised a satisfactory water supply, according to the Chicago *Tribune*. Laborers and skilled workmen, who have been constructing new buildings at the hospital, quit work several days prior to this after a futile demand that contractors be responsible for all expenses if they contracted typhoid while at work, it was stated. The men agreed to resume work when the contractors arranged to haul drinking water from the village of Manteno. The *Tribune* stated that polluted water from artesian wells at the hospital is believed to be responsible for the epidemic which has taken thirteen lives and made hundreds ill. —The Chicago Board of Health recently issued

a statement giving criteria of premature birth in order to simplify reporting of premature and immature infants. Physicians and hospitals should report any infant weighing 2,250 Gm. or less at birth and any premature infant, irrespective of weight. The regulations require that any immature infant shall be reported to the health department by telephone within an hour after birth, and the report must be confirmed in writing within twenty-four hours.

—Applications will be received up to September 30 for the Elizabeth McCormick Child Research Grant of the Institute of Medicine of Chicago. This grant makes available \$750 for some form of encouragement toward child welfare and will be awarded to a qualified investigator in the Chicago area to aid in a piece of research. Projects should in a broad sense be in the field of pediatrics. Additional information may be obtained from Dr. John Favill, secretary of the committee on the Elizabeth McCormick Child Research Grant, 122 South Michigan Avenue.

—The Julius Rosenwald Fund has made a grant of \$3,000 to the University of Chicago to finance a search for unsuspected cases of tuberculosis among patients of the Provident Hospital Clinic. The fund will provide equipment for fluoroscopic examination of about 30,000 patients during the next year. All patients registered will be examined and the families of all those found to have the disease will also be examined, according to the announcement.

—The Chicago Surgical Society announces that competition for its 1940 annual prize is now open to physicians, not members of the society, devoting themselves to surgery in Cook County. The prize of \$250 will be awarded for the most meritorious original investigation in one or both of the fields of experimental and clinical surgery, which has not been printed or presented previously. The manuscript should bear no identification marks of individual, hospital or institution but should be accompanied by a sealed envelop bearing on the outside the title of the paper and containing within it the name and address of the author. The society reserves the right to make no award if the papers submitted do not have sufficient merit. Manuscripts should be sent to the secretary of the Chicago Surgical Society, 54 East Erie Street, Chicago, not later than March 1, 1940.

—The state department of health has issued a

list of laboratories that it has approved for making blood tests for syphilis and microscopic tests for gonorrhea, as required by the laws pertaining to expectant mothers and prenuptial physical examinations. A law recently enacted requires pregnant women to have a blood test for syphilis and specifies that the test must be made in an approved laboratory. The law on premarital examinations was recently amended to require also that the tests be made by approved laboratories. About two years ago the health department organized a committee to set up standards for local laboratories and appointed a trained laboratory specialist to inspect them. All laboratories offering to perform tests for syphilis and gonorrhea were invited to register and apply for certificates of approval. Certificates have now been issued to eighty-five laboratories, forty-eight in Chicago and thirty-seven down state. About 16 per cent of those that applied for certificates failed to meet the standards when first investigated, the health department reported. To aid laboratories in qualifying, the department offers special courses of training to employees, provides a specialist to inspect and make recommendations for improvement and provides certain materials necessary for making blood tests. There are 141 other local diagnostic laboratories that have not been approved, according to the *Illinois Health Messenger*.

—The fall meeting of the Iowa and Illinois Central District Medical Association will be held Wednesday evening, October 25, 1939, at the Le Claire Hotel in Moline, Illinois. The scientific meeting will be preceded by a dinner at 6:30 P. M. At 7:30 Dr. L. J. McCormick of Moline, Illinois, will present a ten minute paper on "Fractures of the Carpal Scaphoid." At 7:45 P. M. the association will be addressed by Dr. W. Wayne Babcock, F. A. C. S., of Philadelphia, Pa., who will speak on "Intestinal Malignancies." Dr. Babcock will be introduced to the association by Dr. D. B. Freeman of Moline, Illinois. Dr. Babcock is professor of surgery and clinical surgery at Temple University School of Medicine, Philadelphia, Pa. The discussion on Dr. Babcock's paper will be opened by Drs. H. P. Miller, Rock Island, Ill., Merle J. Brown, Davenport, Iowa, and C. S. Costigan of Moline, Illinois.—James Dunn, M. D., Secretary.

—The Chicago Surgical Society announces that

competition for the 1940 Annual Prize is now open to young men devoting themselves to surgery in Cook County, and who are not members of the Society. A prize of \$250.00 will be awarded for the most meritorious original investigation in one or both of the fields of experimental and clinical surgery. The paper submitted should be of original work which has not been printed or presented previously. References to the literature, illustrations, and the general makeup of the paper should conform to the accepted standards of medical writing. The manuscript should bear no identification marks of individual, hospital, or institution, but should be accompanied by a sealed envelope bearing on its outside the title of the paper, and containing within it the name and address of the author. The society reserves the right to make no award if work of merit is not submitted. Manuscripts should be sent to the secretary of the Chicago Surgical Society, 54 East Erie Street, Chicago, not later than March 1, 1940.

—Hoffman La Roche Incorporated, Nutley, N. J., have opened a Chicago office in the Palm Olive Building. The manager of the Chicago branch is Eugene W. Marti, until recently manager of the Sandoz Company Pharmaceutical Division. Illinois physicians will doubtless want to avail themselves of the convenience of keeping in touch with the Chicago rather than the home office in Nutley.

Deaths

ANSON MAYES CAMERON, Chicago; Hahnemann Medical College and Hospital of Philadelphia, 1900; member of the Illinois State Medical Society; formerly professor of pediatrics at the Hahnemann Medical College and Hospital, Chicago; served during the World War; aged 65; died, June 20, in Delavan Lake, Wis., of coronary thrombosis and arteriosclerosis.

ORCUTT NATHAN CARR, Oak Park, Ill.; Jenner Medical College, Chicago, 1898; aged 69; died, July 4, of Parkinson's disease.

GEORGE LUTHER DAVENPORT, North Chicago, Ill.; University of Illinois College of Medicine, Chicago, 1907; Fellow of the American College of Surgeons; formerly assistant professor of surgery at his alma mater; at one time attending surgeon to the Michael Reese, Illinois Masonic and Cook County hospitals, Chicago; aged 57; died, June 29, in the Veterans Administration Facility of bronchopneumonia.

THOMAS WALLER FLOYD, Peoria, Ill.; Kentucky School of Medicine, Louisville, 1897; member of the Illinois State Medical Society and the American Academy of Ophthalmology and Oto-Laryngology; served

during the World War; on the staff of the Proctor Hospital; aged 66; died June 5, at the Methodist Hospital of coronary occlusion.

EDSON B. HART, Bloomington, Ill.; Northwestern University Medical School, Chicago, 1900; member of the Illinois State Medical Society; on the staff of the Brokaw Hospital, Normal; aged 67; died, July 18, of coronary occlusion.

RAOUL R. HAAS, Chicago; Chicago Homeopathic Medical College, 1903; Northwestern University Medical School, Chicago, 1906; staff surgeon to the West Side Hospital and the House of Correction Hospital; aged 59; died, July 21, at Cadillac, Mich., of myocarditis and chronic nephritis.

GEORGE J. L. HAUMESSER, Shumway, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1881; at various times president and member of the village board, justice of the peace and county coroner; aged 81; died, July 8, in Alton.

NATHAN A. JONES, Trilla, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1896; member of the Illinois State Medical Society; aged 71; died, June 18, of cerebral hemorrhage.

JOSEPH KROST, Chicago; Rush Medical College, 1881; member of Illinois State Medical Society; aged 79; died, July 20.

IRA MCKINNEY, Champaign, Ill.; Chicago College of Medicine and Surgery, 1916; a Fellow, A. M. A.; served during the World War; on the staff of the Burnham City Hospital; aged 46; died, June 10, in the Presbyterian Hospital, Chicago, of carcinoma of the penis.

WILLIAM WADDELL MELOY, Chicago; Rush Medical College, Chicago, 1897; served during the World War; aged 65; died, June 19, in the Washington Boulevard Hospital of carcinoma of the prostate.

HOMER ALANSON MILLARD, Minonk, Ill.; Hahnemann Medical College and Hospital, Chicago, 1890; a Fellow, A. M. A.; past president and secretary of the Woodford County Medical Society; for many years member of the school board; served during the World War; at various times on the staffs of St. Mary's Hospital, Streator, Mennonite Hospital, Bloomington, and the Brokaw Hospital, Normal; aged 72; died, July 18, of aplastic anemia.

ADAM HALE OLIVER, Edwardsville, Ill.; Washington University School of Medicine, St. Louis, 1893; member of the Illinois State Medical Society; aged 74; died, June 1, of chronic nephritis and fracture of a hip received in a fall.

JOHN AUGUSTINE RILEY, Chicago; Rush Medical College, Chicago, 1895; died, June 20, of cerebral thrombosis and arteriosclerosis.

ARTHUR E. ROTH, Chicago; Harvey Medical College, Chicago, 1901; aged 71; died, June 24.

EVLAN SARGENT, Moline, Ill.; Northwestern University Medical School, Chicago, 1898; served during the World War; aged 68; died, June 4.

JUSTUS VANCULEN WHITE, Decatur, Ill.; Rush Medical College, Chicago, 1900; served during the World War; aged 66; died, June 21, of heart disease.

Old Way...

CURING RICKETS in the CLEFT of an ASH TREE

FOR many centuries,—and apparently down to the present time, even in this country—ricketic children have been passed through a cleft ash tree to cure them of their rickets, and thenceforth a sympathetic relationship was supposed to exist between them and the tree.

Frazer* states that the ordinary mode of effecting the cure is to split a young ash sapling longitudinally for a few feet and pass the child, naked, either three times or three times three through the fissure at sunrise. In the West of England, it is said the passage must be "against the sun." As soon as the ceremony is performed, the tree is bound tightly up and the fissure plastered over with mud or clay. The belief is that just as the cleft in the tree will be healed, so the child's body will be healed, but that if the rift in the tree remains open, the deformity in the child will remain, too, and if the tree were to die, the death of the child would surely follow.

*Frazer, J. G.: *The Golden Bough*, vol. 1, New York, Macmillan & Co., 1923



It is ironical that the practice of attempting to cure rickets by holding the child in the cleft of an ash tree was associated with the rising of the sun, the light of which we now know is in itself one of Nature's specifics.

New Way...

Preventing and Curing Rickets with OLEUM PERCOMORPHUM

NOWADAYS, the physician has at his command, Mead's Oleum Percomorphum, a natural vitamin D product which actually prevents and cures rickets, when given in proper dosage.

Like other specifics for other diseases, larger dosage may be required for extreme cases. It is safe to say that when used in the indicated dosage, Mead's Oleum Percomorphum is a specific in almost all cases of rickets, regardless of de-

gree and duration. Mead's Oleum Percomorphum because of its high vitamins A and D content is also useful in deficiency conditions such as tetany, osteomalacia and xerophthalmia.

Mead's Oleum Percomorphum is not advertised to the public and is obtainable at drug stores in boxes of 25 and 100 10-drop capsules and 10 and 50 cc. bottles. The large bottle is supplied, at no extra cost, with Mead's patented Vacap-Dropper. It keeps out dust and light, is spill-proof, unbreakable, and delivers a uniform drop.

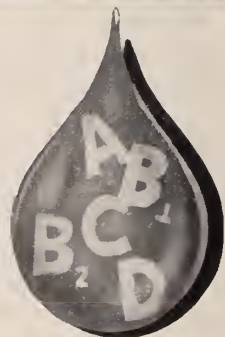
MEAD JOHNSON & COMPANY, Evansville, Indiana, U. S. A.

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons.

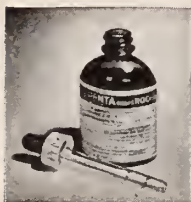


VI-PENTA DROPS

**FOR CHILDREN AND ADULTS
WHO CANNOT SWALLOW CAPSULES**



Vi-Penta Drops is a unique preparation which solves the problem of providing adequate vitamin supplements — all 5 important vitamins — for infants, older children, and adults who cannot swallow capsules. The vitamins in Vi-Penta Drops are in a highly concentrated, clear, palatable solution. PACKAGES: 15 cc and 60 cc, with measuring dropper, calibrated for 5- and 10-minim doses. One 15-cc vial equals 1 package of 25 Vi-Penta Perles. One 60-cc vial equals 1 package of 100 Vi-Penta Perles. HOFFMANN - LA ROCHE, INC. • NUTLEY • NEW JERSEY



Vi-Penta Drops may be added directly to the prepared bottle or glassful of milk, or to broth, soup, orange, or tomato juice without producing a disagreeable flavor. The proper dose (10 minims average) may be added to a pudding, ice cream, or on a lump of sugar. It may also be added to gruel, cooked or "prepared" cereals.

**All 5
IMPORTANT VITAMINS**

•
CLEAR, PALATABLE SOLUTION

Cut Out This Page and Post Conspicuously

BUYERS INDEX

ABDOMINAL SUPPORTERS

S. H. Camp & Co., Jackson, Mich..... 13

FOODS

Borden Company, 350 Madison Ave., New York..... 12

Coca-Cola Co., Atlanta, Ga..... 30

Corn Products Refining Co., New York City..... 6

R. B. Davis Co., Hoboken, N. J..... 15

Knox Gelatine Laboratories, Johnstown, N. Y..... 4

Mead, Johnson & Co., Evansville, Ind..... 19

S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Medical Protective Co., Fort Wayne, Ind..... 26

Physicians Casualty Co., Omaha, Neb..... 23

HOSPITALS

Stokes Hospital, Louisville, Ky..... 23

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 23

PHARMACEUTICALS

American Can Co., 230 Park Ave., New York City..... 3

Armour & Co., Chicago.....

Ernst Bischoff, Ivoryton, Conn.....

Bovine Company, Chicago..... 17

Bristol-Myers Co., New York.....

Carrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J.. 24

Ciba Company, Cedar and Washington St., New York City..

Denver Chemical Co..... 33

E. Fougere & Co.....

Gold Pharmacal Co., New York City..... 26

Harrower Laboratory..... 25

Hoffman-LaRoche, Inc., Nutley, N. J..... 20

Hynson, Wescott & Dunning, Charles and Chase Sts.,

Baltimore..... 26

Lederle Laboratories, 30 Rockefeller Plaza, New York...34, 35

Lilly, Eli & Co., Indianapolis, Ind..... 18

Maggot Products Co., 222 No. Bank Drive, Chicago..... 11

Morris, Philip, & Co., 19 Fifth Ave., New York.....

Nutrition Research Laboratories, 332 S. Michigan Ave.,
Chicago.....

Parke, Davis & Co., Detroit, Mich..... 5

Petrolagar Laboratories, 8134 McCormick Blvd., Chicago... 4

Reed & Carnrick, Jersey City, N. J.....

Roche Organon, Inc., Nutley, N. J..... 2

Schering & Glatz, Inc., New York City..... 10

G. D. Searle & Co., 4737 Ravenswood Ave., Chicago.....

Shaver Corp. of America..... 29

Sharp & Dohme, 111 N. Canal St., Chicago..... 8

E. R. Squibb & Sons, New York..... 9

Frederick Stearns & Sons, New York..... 16

Upjohn Co., Kalamazoo, Mich..... 27

Wm. R. Warner & Co., 113 W. 118th St., New York City..

Winthrop Chemical Co., 170 Varick St., New York City.. 14

Zemmer Co., Pittsburgh, Pa..... 22

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville, Ill..... 25

Kenilworth Sanitarium, Kenilworth, Ill..... 22

Michell Farm Sanatorium, Peoria, Ill..... 36

Milwaukee Sanitarium, Wauwatosa, Wis..... Front Cover

Norbury Sanitarium, Jacksonville, Ill..... 22

North Shore Health Resort, Winnetka..... 25

Rogers Memorial Sanitarium, Oconomowoc, Wis..... 36

Waukesha Springs Sanitarium, Waukesha, Wis..... 22

Weirick's Sanitarium, Elgin, Ill..... 23

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago.. 23

SURGICAL SUPPLIES

Baum Co., New York.....

General Electric X-Ray Corp., 2012 W. Jackson Blvd.,
Chicago.....

The NORBURY SANATORIUM

JACKSONVILLE, ILLINOIS

INCORPORATED and LICENSED

For the Treatment of Nervous and Mental Disorders

DR. ALBERT H. DOLLEA, Superintendent

DR. FRANK GARM NORBURY

DR. SAMUEL N. CLARK

Associate Physicians

Address
Communications

THE NORBURY SANATORIUM, Jacksonville, Illinois



BUILDING ABSOLUTELY FIRE-PROOF

Waukesha Springs Sanitarium

FOR THE CARE AND TREATMENT OF
NERVOUS DISEASES

BYRON M. CAPLES, M. D., Medical Director

FLOYD W. APLIN, M. D.

Waukesha, Wisconsin

E. J. Kelleher, M. D.
Medical Director

Kenilworth Sanitarium

Est. in 1905 by Sanger Brown, M. D.

Built and Equipped for the Treatment of
Nervous and Mental Diseases

F. G. Shufflebarger, M. D.
Junior Physician

Write for Booklet
on
Insulin and Metrazol Therapy

Christy Brown
Business Manager

Address:
Box 600
Kenilworth, Ill.

ZEMMER

products are dependable

DERMAL PENATRIN

In acne rosacea, pruritic affections, psoriasis, insect bites, sunburn, etc. Penetrating, soothing, water soluble, greaseless base. Write for sample.

THE ZEMMER CO., Oakland Sta., Pittsburgh, Pa.

IL 10-39

Chicago Tumor Institute

21 WEST ELM STREET

Phone: Delaware 5600

Scientific Committee

Max Cutler, M. D., Chairman

Sir G. Lenthal Cheattle, F. R. C. S.

Henri Coutard, M. D.

Arthur H. Compton, Ph. D.

Ludvig Hektoen, M. D.

The Chicago Tumor Institute offers consultation service to physicians and radiation facilities to patients suffering from neoplastic diseases. Graduate instruction in radiotherapy is offered to qualified physicians.

The Radiation Equipment includes:

One 220 k.v. x-ray apparatus

One 400 k.v. x-ray apparatus

One 500 k.v. x-ray apparatus

One 10 gram radium bomb.

MORPHINE AND OTHER DRUG ADDICTIONS

Selected patients who wish to make good and learn how to keep well; methods easy, regular, humane. Dr. Weirick's Sanitarium, Elgin, Ill.

Beautiful assorted Christmas Greeting Cards with Envelopes, fifty for \$2. Scripture Text assortment, \$3. We will print a small Scripture Verse, your selection on each. Your name also printed on each or omitted. Order early for Printing.

NICHOLS & COMPANY,
ROCKMART, GEORGIA

THE STOKES HOSPITAL

923 Cherokee Road,
Louisville, Kentucky

Our **ALCOHOLIC** treatment destroys the craving, restores the appetite and sleep, and rebuilds the physical and nervous condition of the patient. Liquors withdrawn gradually; no limit on the amount necessary to prevent or relieve delirium.

MENTAL patients have every comfort that their home affords. The **DRUG** treatment is one of gradual Reduction. It relieves the constipation, restores the appetite and sleep; withdrawal pains are absent. No Hyoscine or rapid withdrawal methods used unless patient desires same.

NERVOUS patients are accepted by us for observation and diagnosis as well as treatment.

E. W. STOKES, Medical Director. Phones High. 2101-2102



SINCE 1902

Hospital
Accident
Sickness

PHYSICIANS CASUALTY
ASSOCIATION

PHYSICIANS HEALTH
ASSOCIATION



SINCE 1912

INSURANCE

FOR ETHICAL PRACTITIONERS EXCLUSIVELY
(50,000 policies in force)

LIBERAL HOSPITAL EXPENSE COVERAGE FOR
\$10.00 PER YEAR

\$5,000.00 accidental death	For
\$25.00 weekly indemnity, accident and sickness	\$33.00 per year
\$10,000.00 accidental death	For
\$50.00 weekly indemnity, accident and sickness	\$66.00 per year
\$15,000.00 accidental death	For
\$75.00 weekly indemnity, accident and sickness	\$99.00 per year

37 years under the same management
\$1,700,000. INVESTED ASSETS
\$9,000,000. PAID FOR CLAIMS
\$200,000. deposited with State of Nebraska for protection of our members.
Disability need not be incurred in line of duty—benefits from the beginning day of disability.
SEND FOR APPLICATIONS, DOCTOR, TO
400 FIRST NATIONAL BANK BLDG.
OMAHA, NEBRASKA

Radium Rental Service

By

THE PHYSICIANS RADIUM
ASSOCIATION

Organized for the purpose of making radium available to physicians to be used in the treatment of their patients. Radium loaned to physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

The Physicians Radium Association

Room 1307—55 East Washington St.,
Pittsfield Bldg., CHICAGO, ILL.

Telephones: Central 2268-2269
Wm. L. Brown, M.D., Director

HEMOCHROMIN

A New Liver and Iron Combination



Hemochromin is a combination of the secondary anemia liver fraction and ferrous sulphate. Each tablet contains $2\frac{1}{2}$ grains of liver fraction and exsiccated ferrous sulphate equivalent to $2\frac{1}{2}$ grains of ferrous sulphate U. S. P. One gram (15 grains) daily has been shown to be adequate dosage and is much less than is required of most of the iron compounds. The patient receives this amount by taking only 2 tablets three times daily after meals.

Bottles of 50 tablets specially coated to retain their original characteristics.

G. W. CARNRICK CO.

20 Mt. Pleasant Avenue Newark, New Jersey

STATE CARE OF CRIPPLED CHILDREN

There were 1,744 patients seen in the sixty clinics for crippled children held in thirty different sites in Illinois in the fiscal year 1937-1938, according to a recent report of the division for handicapped children, state department of public welfare. Of 783 patients recommended for hospital care, 45.6 per cent. were hospitalized during the fiscal year, while the majority of the group had been hospitalized by Dec. 1, 1938. A program of consultation on poliomyelitis was initiated and was in operation during the summer of 1938 in the entire state except within the city limits of Chicago, where other agencies covered the field. All the sporadic cases of poliomyelitis of 1938 that needed hospital care were sent to hospitals. There were but twenty-five bona fide cases during the summer. The field nurses of the division for handicapped children made 10,410 visits during the year and 51,960 days of hospital care were provided to crippled children by the department of public welfare; of these children, 8,426 were in the wards of the general hospitals of the state, where orthopedic surgeons are cooperating in the plan for this care with the division for handicapped children. Appliances were furnished to patients attending the clinics in the following numbers: braces 138, artificial limbs 39, and orthopedic shoes and shoe corrections 184.

KILLING THE GOOSE THAT LAYS THE GOLDEN EGG

Doctor McTavish had worked hard to put his boy Sandy through medical school. When Sandy graduated and returned home the old doctor turned his practice over to the boy and took a well earned vacation.

Upon his return he was greeted by Sandy at the station, who said: "Father, I've made some marvelous cures. I even cured Mrs. MacGregor's stomach trouble after you had treated her for four years!"

"What?" exclaimed the old doctor. "I'll have you to know that Mrs. MacGregor's stomach put you through college."

YIELDING TO THE MAJORITY

A Philadelphia physician, in declaring that insanity was frequently productive of sound logic tempered with wit, told the story of a patient he once met in an asylum.

He came across this patient while strolling through the grounds, and stopping, spoke to him. After a brief conversation on conventional topics the physician said:

"Why are you here?"

"Simply a difference of opinion," replied the patient. "I said all men were mad, and all men said I was mad—and the majority won."—Lippincott's.

NORTH SHORE HEALTH RESORT Winnetka, Illinois

A general medical sanitarium equipped for treatment of

Cardiovascular, Renal, Gastro-intestinal and Pulmonary Diseases—Diabetes Mellitus and other Disorders of Metabolism—Anemias—Allergic Conditions—Arthritis—Disabilities Secondary to Old Age—Mild Nervous and Mental Disorders.

Special attention to convalescent care.

Individualized Treatment

Moderate Rates

H. E. Hickman, M. D., *Medical Director*

THE EDWARD SANATORIUM

ESTABLISHED IN 1907 BY DR. THEODORE B. SACHS

Jerome R. Head, M. D., *Medical Director*

Alberto L. de Guevara, M. D., *Associate Medical Director*

NAPERVILLE, ILLINOIS

An institution affiliated with the Chicago Tuberculosis Institute for the treatment, by modern methods, of selected cases of Pulmonary Tuberculosis.

Attractive location and surroundings.

Buildings and equipment modern and adequate for all emergencies.

Well trained staff of physicians and nurses.

Physicians are invited to visit the Sanatorium at any time. They are assured of every professional courtesy and consideration.

For detailed information, rates and rules for admission apply to—

THE CHICAGO TUBERCULOSIS INSTITUTE

Phone Central 8316

Rooms 504

360 North Michigan Ave.

Chicago

Pioneer work . . .

is always hard—many times misunderstood—but it has its rewards. There is a great satisfaction in having accomplished something in our efforts to make it easier for the profession to alleviate some of the ills that beset mankind.

The HARROWER LABORATORY, Inc.

Glendale, California

*Ending a quarter of a century
of pioneer work in the field of*

Endocrinology

ADREMIN

ANABOLIN

MENOCRIN

ENDOTHYRIN

ADRENO-CORTIN

PLESTRIN IN OIL

PROFESSIONAL PROTECTION



A DOCTOR SAYS:

"In this one instance I have been more than repaid for maintaining the protection from your company throughout the twenty years I have been in practice."

THE

MEDICAL PROTECTIVE COMPANY

OF FORT WAYNE, INDIANA

WHEATON, ILLINOIS

CONTENTS—Continued

Septal Defect with Mitralstenosis. J. D. Kirshbaum, M. D. and Lawrence Perlman, M. D., Chicago.....	380
Problems in Gynecology. Leo Brady, M. D., Baltimore, Maryland	357
Late Obstetric Hemorrhages Re Maternal Mortality in Chicago. Charles Newberger, M. D., Chicago.....	368
Undulant Fever: Sources and Prophylaxis. John F. Shronts, M. D., Woodstock, Ill.....	373
Obstetric Analgesia. Edwin Nash, M. D., Galesburg, Ill....	383

EDITORIALS

Professional Pride vs. Political Promotion.....	301
County Societies Discuss Wagner Bill.....	301
Politics vs. Research.....	302
A. M. A. Policy Not Reversed.....	302
Wagner Bill Hearing.....	303
Problem of Mental Defectives.....	305
Have You Read the Following?.....	306
Doctor Colwell's Daily Log.....	307
Medical Economics. E. S. Hamilton, M. D.....	308

CORRESPONDENCE

To Members. Dr. Robert H. Hayes.....	309
Program Chicago Medical Society.....	310
Scientific Program Chicago Medical Society. N. S. Davis, III, M. D.....	310
Scientific Service Committee. Robert S. Bergkoff, M. D., Public Meetings Chicago Medical Society. N. S. Davis, III, M. D.....	311
U. S. Civil Service.....	312
Equal Standards for All.....	312
Michael M. Davis.....	312
Chicago Heart Association.....	312
American Board of Obstetrics.....	314
Symposium for Industrial Nurses.....	314
Woman's Auxiliary.....	315
International Assembly.....	316
Shipment of Radium.....	317
Society Proceedings.....	388
All-Day Clinical Conference.....	388
Marriages.....	389
Personals.....	389
Personals.....	390
Deaths.....	392

Behind MERCUROCHROME

(dibrom-oxymercuri-fluorescein-sodium)



is a background of

Precise manufacturing methods insuring uniformity

Controlled laboratory investigation

Chemical and biological control of each lot produced

Extensive clinical application

Thirteen years' acceptance by the Council of Pharmacy and Chemistry of the American Medical Association



A booklet summarizing the important reports on Mercurochrome and describing its various uses will be sent to physicians on request.

Hynson, Westcott & Dunning, Inc.
BALTIMORE, MARYLAND

A Unique Remedy of Unique Merit

ELIXIR BROMAURATE

Is of pre-eminent therapeutic value in

Whooping Cough

- Cuts short the duration of the illness, reduces the frequency of the attacks, relieves the distressing, painful cough and gives the child rest and sleep.
- **ELIXIR BROMAURATE** is equally valuable in other PERSISTENT COUGHS and in BRONCHITIS and BRONCHIAL ASTHMA.
- **ELIXIR BROMAURATE** is a standard, assayed and palatable gold preparation. The dosage for children is a teaspoonful every 3 to 4 hours. Adult dosage two teaspoonfuls.

In four-ounce original bottles

GOLD PHARMACAL CO., New York

LITTLE IF ANY *Psycho-Motor Stimulation*

THE local vasoconstrictive influence of Solution Racephedrine Hydrochloride is ordinarily unattended by the distressing side actions produced at times by natural ephedrine. Insomnia, nervousness, tachycardia, and palpitation seldom follow its use, permitting application at frequent intervals if necessary.

Applied topically to the nasal mucous membranes, Solution Racephedrine Hydrochloride produces sustained vasoconstriction and decongestion of edematous tissues. Soothing and nonirritating, it does not lead to nasal smarting or itch-

ing. Safer for use in children, hypertensive patients and patients known to react adversely to natural ephedrine. Indicated in acute coryza and sinusitis, and for symptomatic relief in hay fever and allergic rhinitis.

Racephedrine Hydrochloride is a mixture of d- and l-ephedrine, synthetically prepared. Available in 1 per cent concentration in an isotonic, modified Ringer's solution vehicle. Supplied in 1 ounce dropper bottles for prescription purposes, and in pint bottles for office use.

Physicians are invited to send for literature, bibliography, and samples.

SOLUTION

Racephedrine
HYDROCHLORIDE



THE UPJOHN COMPANY
KALAMAZOO, MICHIGAN
*Makers of Fine Pharmaceuticals
Since 1886*



ILLINOIS STATE MEDICAL SOCIETY

OFFICERS OF SECTIONS, ILLINOIS STATE MEDICAL SOCIETY, 1939-1940

SECTION ON MEDICINE

E. M. Stevenson, Chairman, Bloomington
W. O. Thompson, Secretary, Chicago

SECTION ON SURGERY

Frederick Christopher, Chairman, Evanston
Charles L. Patton, Secretary, Springfield

SECTION ON EYE, EAR, NOSE AND THROAT

Frank W. Brodrick, Chairman, Sterling
Thomas D. Allen, Secretary, Chicago

SECTION ON PUBLIC HEALTH AND HYGIENE

John J. McShane, Chairman, Springfield
N. O. Gunderson, Rockford, Ill.

SECTION ON RADIOLOGY

Warren E. Furey, Chairman, Chicago
Harry W. Ackemann, Secretary, Rockford

SECTION ON PEDIATRICS

H. Wm. Elghammer, Chairman, Chicago
Orville Barbour, Vice-Chairman, Peoria
Bert I. Beverly, Secretary, Oak Park

SECTION ON OBSTETRICS AND GYNECOLOGY

W. A. Malcolm, Chairman, Peoria
Herbert E. Schmitz, Secretary, Chicago

SECRETARIES' CONFERENCE

A. R. Brandenberger, Chairman, Danville
A. R. Bogue, Vice-Chairman, Rochelle
Carl E. Clark, Secretary, Sycamore

COUNTY SOCIETIES

This list is corrected in accordance with the best information obtainable at the date of going to press. County Secretaries are requested to notify The Journal of any changes or errors.

County	President	Secretary
Adams	Donald Root, Mendon	C. A. Hendricks, Quincy.
Alexander	Edward Miller, Cairo	J. S. Johnson, Cairo.
Bond	D. T. Brown, Mulberry Grove	W. R. Ketterer, Greenville.
Boone	K. L. Hood, Belvidere	E. F. Dettmann, Belvidere.
Bureau	D. H. Poppens, Princeton	C. R. Bates, Ladd.
Calhoun	(See Pike-Calhoun)	
Carroll	R. H. Petty, Mt. Carroll	L. B. Hussey, Savanna.
Cass	J. A. McGee, Virginia	Geo. L. Athey, Beardstown.
Champaign	R. C. Armstrong, Champaign	W. H. Showengerdt, Champaign.
Christian	Perry Duncan, Taylorville	R. M. Seaton, Morrisonville.
Clark	R. B. Boyd, Casey	H. C. Houser, Westfield.
Clay	J. P. Shore, Sallor Springs	M. H. Parker, Flora.
Clinton	H. B. Warren, Breese	J. Q. Roane, Carlyle.
Coles-Cumberland	Martin Bisson, Charleston	W. F. Stafford, Mattoon.
Cook	Nathan S. Davis, III, Chicago	H. Prather Saunders, Chicago.
Crawford	J. H. Price, Robinson	J. W. Long, Robinson.
De Kalb	E. W. Teiford, Dekalb	Carl E. Clark, Sycamore.
De Witt	H. L. Meltzer, Clinton	Wm. R. Marshall, Clinton.
Douglas	Carlton R. Smith, Villa Grove	J. O. Cletcher, Tuscola.
Du Page	Ernest S. Watson, Elmhurst	A. R. Rikhl, Naperville.
Edgar	Nettie M. Dorris, Paris	J. J. Murphy, Paris.
Edwards	A. J. Boston, Albion	R. L. Motor, Albion.
Effingham	S. J. Hanson, Effingham	G. Marshall, Effingham.
Fayette	M. Greer, Vandalia	E. A. Kuehn, Vandalia.
Ford	S. B. Furby, Paxton	M. D. E. Peterson, Paxton.
Franklin	Geo. Burkhardt, Benton	C. P. Holoffe, West Frankfort.
Fulton	H. C. Putman, Canton	O. M. Wood, Ipava.
Gallatin	J. C. Murphy, Ridgway	E. W. Burroughs, Ridgway.
Greene	W. T. Stickley, White Hall	W. H. Garrison, White Hall.
Hancock	R. R. Loomis, Warsaw	Blair Kelly, Ferris.
Hardin	L. D. Dusch, Golconda	H. H. Watson, Elizabethtown.
Henderson	C. J. Eads, Oquawka	Elmer T. Swann, Oquawka.
Henry	D. E. Meier, Kewanee	P. J. McDermott, Kewanee.
Iroquois	N. O. Hungness, Sheldon	L. E. Messman, Onarga.
Jackson	Ben Fox, Carbondale	Edward K. Ellis, Murphysboro.
Jasper	D. R. Martin, Newton	R. S. Wishard, Wheeler.
Jefferson Hamilton	C. J. Anslinger, Mt. Vernon	Andy Hall, Mt. Vernon.
Jersey	H. R. Gledhill, Jerseyville	R. G. Mindrup, Jerseyville.
Jo Daviess	G. C. McGinnis, Warren	R. E. Logan, Galena.
Johnson	Wm. Thompson, Cypress	E. A. Veach, Vienna.
Kane	H. T. Mostrom, Batavia	K. M. Manougian, Elgin.
Kankakee	A. L. Nickerson, Kankakee	Chas. Allison, Kankakee.
Kendall	No Society.	
Knox	Louis N. Tate, Galesburg	Wm. F. Maley, Galesburg.
Lake	L. E. Bovik, Waukegan	M. T. Brown, Zion City.
La Salle	W. P. Fread, Ottawa	Roswell T. Pettit, Ottawa.
Lawrence	E. M. Cooley, Lawrenceville	Ralph B. Armitage, Lawrenceville.
Lee	C. G. Pool, Compton	J. L. Tavenner, Dixon.
Livingston	H. L. Lockner, Chatsworth	J. G. Barnheiser, Pontiac.
Logan	Le Roy Branom, Lincoln	Lee N. Hamm, Lincoln.
McDonough	R. O. Stites, Industry	Wm. M. Hartman, Macomb.
McHenry	Geo. H. Pfueger, Crystal Lake	J. F. Harris, Richmond.
McLean	H. W. Wellmerding, Bloomington	H. P. Sloan, Bloomington.
Macon	S. J. Wilkinson, Decatur	F. R. Martin, Decatur.
Macoupin	J. H. Finney, Girard	J. J. Grandone, Gillespie.
Madison	R. C. Berry, Livingston	D. D. Monroe, Alton.
Marion	H. E. Ryan, Centralia	E. N. Neber, Centralia.
Mason	E. J. Corey, Havana	D. V. Auld, Havana.
Massac	W. S. Dixon, Metropolis	J. H. Gann, Brookport.
Menard	Irving Newcomer, Petersburg	R. E. Valentine, Tallula.
Mercer	L. E. Robinson, Aledo	V. A. McClanahan, Aledo.
Monroe	E. T. Lark, Columbia	J. A. Werth, Waterloo.
Montgomery	Geo. A. Telfer, Hillsboro	H. F. Bennett, Litchfield.
Morgan	G. L. Drennan, Jacksonville	Friedrich Engelback, Jacksonville.

(Continued on page 31)

Shaver Corporation of America

*Offers every man a
30 Day Free Trial!*



Operates on A.C. or D.C. Current
GUARANTEED

ELECTREX

*This Shaver was advertised and sold
by leading stores from \$10 to \$12.50*

OUR SPECIAL PRICE \$3.00

Postpaid

Here are six outstanding features of this famous Electric Dry Shaver:

1. **SHAVES CLOSER!** The Electrex's new shearing mechanism cuts the hair of the beard at the surface of the skin. It is impossible to cut the face.
2. **NO BREAKING IN!** No practice period required. The Electrex cuts at the natural angle to which shavers are accustomed. Used efficiently and comfortably from the start.
3. **NO PULL ON BEARD!** The Electrex shaves easily, painlessly and without any after effects of skin irritation.
4. **COMFORT GRIP!** It is designed and shaped to fit the hand comfortably while shaving in any position.
5. **NEW TYPE HEAD!** Safety leader guards prepare the hair of the beard effectively by projecting them at the correct angle for the Electrex's new shearing mechanism.
6. **SAVES TIME!** Shaves any beard no matter how tough in less time than any other dry shaver on the market. Enjoys the advantage of a separable connector.

Here's the secret of the closest and smoothest shave

NATURAL SHAVING STROKE. The Electrex Shaves at the natural angle to which all men are accustomed.

SHEARING MECHANISM cuts hair at skin line—no metal between skin and shearing blade. Delivers close and comfortable shave.

SHOOTHEST MOTOR and most power-

ful. It gives the smoothest shave of all electric dry shavers.

NEW SPECIAL CHANNELS catch and hold cut hair until removed which eliminates its falling on clothes or body.

IT'S THE IDEAL SHAVER FOR WOMEN! Removes the long, soft hair of women safely and cleanly without skin irritation and without stimulating hair growth.

SHAVER CORPORATION OF AMERICA, 800 Broad Street, Newark, New Jersey

Dept. J. M.

Enclose please find \$..... for which send me Genuine Lifetime Electrex Dry Shaver with Genuine Leather or silk case, cleaner, directions and guarantee. It is understood that this is the same Shaver that was advertised and sold formerly from \$10 to \$12.50.

Name Address

City State

P. S. You may use the Shaver for 30 days from the day it is shipped you and if not as represented you may return same and receive a refund.

NOTE: If you do decide to be old-fashioned, we will expect you to return shaver in the same condition as you received it—with all due allowance for regular usage.

Drink
Coca-Cola
Delicious and Refreshing

**THE
DRINK
EVERYBODY
KNOWS**

COPYRIGHT 1939, THE COCA-COLA COMPANY

Book Reviews

SURGERY OF THE EYE. By Meyer Wiener, M. D., Professor of Clinical Ophthalmology, Washington University School of Medicine, St. Louis, Missouri; and Bennett Y. Alvis, M. D., Assistant Professor of Clinical Ophthalmology, Washington University School of Medicine, St. Louis, Mo. 445 pages with 396 illustrations. Philadelphia and London. W. B. Saunders Company, 1939. Cloth, \$8.50.

This work is intended as a handy atlas for the practicing ophthalmologist and student of ophthalmology, who can quickly refer to it for information on the surgical correction of ocular defects and disease. No attempt is made to make it a book of reference.

TRANSACTIONS OF THE THIRD INTERNATIONAL GOITER AND THE AMERICAN ASSOCIATION FOR THE STUDY OF GOITER. Portland-Oregon. Goiter Publications. 1938. Price \$6.00.

This volume represents the compiled work of the American Association for the study of Goiter. In it there is embodied the best thoughts of and experience of goiter experts throughout United States and Europe.

The content of the work is divided into thirteen chapters as follows: I. Etiology. II. Prophylaxis. III. Congenital and childhood factors. IV. New

Growth and Infection. VI. Surgical Aspects. VII. Medical Aspects, Cardiac and Renal Aspects. VIII. Iodine. IX. Vitamins and Thyroid. XI. Metabolism and Basal Metabolic Rate. XII. X-Ray. XIII. Colloid Goiter.

BAPTISM OF INFANTS AND FETUS. An outline for the use of doctors and nurses. By Rev. J. R. Bowen, Chaplain St. Joseph Mercy Hospital, Dubuque, Iowa. Fourth edition. The M. J. Knippel Company. 1939. Price, paper, 25 cents.

This brochure is at present considered a standard work of its kind. The author feels that apart from its intrinsic value, baptism, plays an important role in medical practice. It is the only consolation left to many parents when the infant or the fetus dies, and for this reason it contributes more than anything else to the mental comfort of the mother.

The brochure prescribes methods of baptizing Catholic babies. It is directed to Catholic and non-Catholic physicians and nurses officiating at deliveries with the view of bringing "the privileges of baptism to the little ones, and affording inestimable consolation to the parents," particularly when viability of the newborn is in question. The pamphlet lends itself to ready reference and should be available in all maternity departments.

(Continued from page 28)

Moultrie	S. H. Ambrose, Lovington.....	W. B. Kilton, Sullivan.
Ogle	G. S. Henderson, Holcomb.....	A. R. Bogue, Rochelle.
Peoria	H. B. Magee, Peoria.....	C. W. Magaret, Peoria.
Perry	Geo. H. Gutridge, DuQuoin.....	H. I. Stevens, Tamaroa.
Platt	W. N. Slevers, White Heath.....	J. M. Holmes, Monticello.
Pike	C. P. McRaven, Pittsfield.....	F. N. Wells, Pittsfield.
Pope	S. P. Ward, Golconda.....	L. S. Barger, Golconda.
Pulaski	Oscar Karraker, Olmsted.....	Otis T. Hudson, Mounds.
Randolph	C. O. Boynton, Sparta.....	W. W. Fullerton, Steelville.
Richland	E. L. Williamson, Calhoun.....	Paul C. Weber, Olney.
Rock Island	Louis Ostrom, Rock Island.....	Paul Youngberg, Moline.
St. Clair	Lawrence A. Ryan, East St. Louis.	R. F. Sondag, East St. Louis.
Saline	Neva Skelton, Eldorado.....	Robert Ferrell, Eldorado.
Sangamon	E. L. Bernard, Springfield.....	E. H. Ennis, Springfield.
Schuyler	Geo. C. Bates, Rushville.....	A. W. Ball, Rushville.
Scott	No Society.	
Shelby	Theo. Thompson, Shelbyville....	C. H. Hulick, Shelbyville.
Stephenson	John J. Grant, Freeport.....	C. M. Becker, Freeport.
Tazewell	C. A. Cox, Morton.....	C. A. Nelson, Pekin.
Union	M. E. Cosand, Dongola.....	W. J. Benner, Anna.
Vermilion	Robert Clements, Danville.....	A. R. Brandenberger, Danville.
Wabash	E. P. Keneipp, Mt. Carmel.....	H. A. Elkins, Mt. Carmel.
Warren	H. L. Kampen, Monmouth.....	Chas. P. Blair, Monmouth.
Washington	P. B. Rabenneck, Nashville.....	G. A. Green, Nashville.
Wayne	G. Ray Hill, Fairfield.....	J. T. Blakely, Fairfield.
White	Frank C. Sibley, Carmi.....	J. A. Legier, Carmi.
Whiteside	Neal J. Marquis, Sterling.....	G. J. Pohly, Rock Falls.
Will-Grundy	Geo. Woodruff, Joliet.....	Earl Leimbacher, Joliet.
Williamson	R. L. Kane, Herrin.....	J. W. Tidwell, Herrin.
Winnebago	N. C. Bullock, Rockford.....	Wm. K. Ford, Rockford.
Woodford	Ernest Pearson, Eureka.....	W. S. Morrison, Minonk.

Book Reviews

TREATMENT IN GENERAL PRACTICE. In two volumes. Boston. Little, Brown & Company. 1939. Price \$7.50.

The British Medical Journal published a series of articles on treatment, each article written by a well known clinical teacher. Later, the various articles were gathered together and published in book form. There are two volumes to the series. The first dealt with treatment of the acute infectious diseases and of cardiovascular disease; the second, with treatment of more chronic conditions such as diseases of the nervous system, diseases of the blood and blood-forming apparatus, rheumatism, diseases of metabolism, and kidney diseases. The two volumes are now published in the United States. Each article is well written. They should be of help not only to general practitioners but also to teachers and medical students.

EPIDEMIC ENCEPHALITIS. ETIOLOGY — EPIDEMIOLOGY TREATMENT. Third report by the Matheson Commission. New York. Morningside Heights. Columbia University Press. 1939. Price \$3.00.

The "Third Report" has been prepared on much the same lines as the first two reports. The long continued followup of a large number of patients suffering from this disease or other conditions closely simulating it has provided a volume of clinical evidence and experience that has proven of greatest value in differential diagnosis and in the appraisal of methods of treatment. The bibliography has been carried on from the beginning of 1930 through the first half of 1937, and many of the more important references in the second half of 1937 and the first half of 1938 have been included. In the laboratory program several viruses have been

isolated and vaccines have been produced and tried in treatment.

Contents: Foreword; In Memoriam; Introduction; I. The Work of the Matheson Commission; II. Summary of Investigation on Etiology: Epidemic Encephalitis; St. Louis Type Encephalitis; Japanese B Encephalitis; Human Encephalitis Caused by the Viruses of Eastern and Western Equine Encephalomyelitis; Post-Vaccinal Encephalitis; Post-Infectious Encephalitis; Australian X-Disease; Hemorrhagic Encephalitis; III. Various Allied Diseases; Louping-III; Lymphocytic Choriomeningitis; The Guillain-Barre Syndrome; IV. Summary of the Treatment of Encephalitis: Epidemic Encephalitis; St. Louis Type of Encephalitis; Japanese B Encephalitis; Post-Infectious Encephalitis; Post-Vaccinal Encephalitis; Conclusion; V. Epidemiology: Epidemic Encephalitis; St. Louis Type Encephalitis; Japanese B Encephalitis. Bibliography. Index.

CLINICAL DIAGNOSIS BY LABORATORY METHODS. By James Campbell Todd, Ph. B., M. D., Late Professor of Clinical Pathology, University of Colorado, School of Medicine; and Arthur Hawley Sanford, A. M., M. D., Professor of Clinical Pathology, University of Minnesota (The Mayo Foundation); Head of Division on Clinical Laboratories, Mayo Clinic. Ninth edition, thoroughly revised. 841 pages with 368 illustrations, 29 in colors. Philadelphia and London. W. B. Saunders Company, 1939. Cloth, \$6.00 net.

In this edition many changes have been made in order to make the book more valuable to students, teachers, physicians, and laboratory workers. In the chapter on blood, Vogel's old classification of anemias has been omitted, and a reclassification by Ottenberg substituted. Because of its simplicity, the old Westergren method for determination of sedimentation rate is included. The work is brought strictly up-to-date and should be in the library of every doctor.

Book Reviews

EYE, EAR, NOSE AND THROAT MANUAL FOR NURSES. By Roy H. Parkinson, M. D. Fourth edition. St. Louis. The C. V. Mosby Company. 1939. Price \$2.25.

Recent advances in methods and treatment are introduced in this fourth edition to bringing it up-to-date. There has been added illustrations and brief instructions for the recording of visual fields and for the making of audiograms.

DISEASES OF THE SKIN. By Richard L. Sutton, M. D. and Richard L. Sutton, Jr., M. D. with 1452 text illustrations and 21 color plates. Tenth edition. Revised, enlarged and reset. St. Louis. The C. V. Mosby Company. 1939. Price, \$15.00.

In this work the author has attempted to tie descriptions and concepts of disorders of the skin with general medicine and biology. The material in this edition has been arranged in a fashion radically different than that of the ninth edition.

Descriptions of all significant entities, syndromes, and concepts and of many exotic, unusual, and even exceptional dermatoses have been incorporated. There have been added ten color plates and some three hundred and forty new illustrations. At least seven thousand bibliographic entries have been added to the rewritten material of the ninth edition.

The work contains a comprehensive index.

HARVEY GRAHAM THE STORY OF SURGERY WITH A FOREWORD BY OLIVER ST. JOHN GOGARTY. New York. Doubleday, Doran & Company, Inc. 1939. Price \$3.75.

This work is not a text book. Not alone is this a surgery, but it is a history of surgery from the dawn of man to the present day, and an instructive forecast of the future. From the first chapters, which tell of the taboos, incantations, superstitions, magic and mysteries by which fairy fiction drest truth severe, to the last which prognosticates a time when with surgery as we now know it we may gradually dispense, it is intensely interesting and instructive.

THE ROCKEFELLER FOUNDATION, INTERNATIONAL HEALTH DIVISION, ANNUAL REPORT, 1938.

THE NEW INTERNATIONAL CLINICS. Edited by George Morris Piersol, M. D. Volume III. New Series Two. Philadelphia, Montreal, New York. J. B. Lippincott Company. 1939.

This work is made up of original contributions: clinics; and evaluated reviews of current advances in the medical arts by outstanding medical authorities of America.

VARICOSE VEINS. By Alton Ochsner, M. D., and Howard Mahorner, M. D., with fifty text illustrations. Two color plates. St. Louis. The C. V. Mosby Company. 1939. Price, \$3.00.

In this work the authors clearly evaluates the clinical studies and methods of treatment of varicose veins and presents briefly the most modern therapy.

PRINCIPLES OF CHEMISTRY. WITH LABORATORY EXPERIMENTS. By Joseph H. Roe, M. D. Fifth Edition. St. Louis. The C. V. Mosby Company. 1939. Price, \$5.00.

This fifth edition shows the same general setup as the fourth. The style is simple and easily understood. Besides bringing the material in this edition up-to-date, of special interest and importance are the following features: More organic chemistry due to league recommendations; radio activity; water balance; hydrogen ion concentration; and new treatment of the laboratory sections.

MICROBIOLOGY AND PATHOLOGY. By Charles F. Carter, M. D. With 165 Text Illustrations and 25 color plates. Second Edition. St. Louis. The C. V. Mosby Company. 1939. Price \$3.25.

This edition contains many changes. These changes mainly have to do with (1) Bringing the material up to date, (2) A large increase in the black and white and the colored illustrations, (3) A new chapter on death.

MATERNAL CARE AND SOME COMPLICATIONS. Approved by the American Committee on Maternal Welfare, Inc. E. L. Adair, M. D. Editor. Chicago, Illinois. University of Chicago Press. Price \$1.50.

COMPARATIVE EFFECT OF COBRA VENOM AND MORPHINE

The onset of analgesia is much slower after an injection of cobra venom but it endures much longer than that produced by opium alkaloids.

Various physicians who have treated particularly malignant diseases with the new drug have reported relief of pain, also a brightening of the patient's psyche.

Both laboratory and clinical results show that the moderate doses (5 to 10 mouse units) "do not injure either the circulation or the kidney or liver function. Pharmacological studies on the drug reveal that its toxicity is not great as compared with its therapeutic efficiency; in other words, the margin of safety is wide and the therapeutic index is a high one."—(D. I. Macht, *The Medical Press and Circular, via Cur. Med. Dig.*, June.)

If a man thinks he's Napoleon and nobody agrees with him, he becomes an inmate of the bug-house; if the masses agree with him, he becomes a dictator.—*Olin Miller in Thomaston (Ga.) Times.*



ACUTE PELVIC CONGESTION

In the treatment of such conditions, the use of Antiphlogistine, applied vaginally, as tampons, and abdominally, as poultices, answers the need for both heat and glycerine medication, for the relief of *inflammation, congestion, and pain.*

ANTIPHLOGISTINE

Sample on request

THE DENVER CHEMICAL MANUFACTURING COMPANY
163 VARICK STREET • NEW YORK CITY

For the prevention and treatment
of neurologic lesions in pernicious anemia—

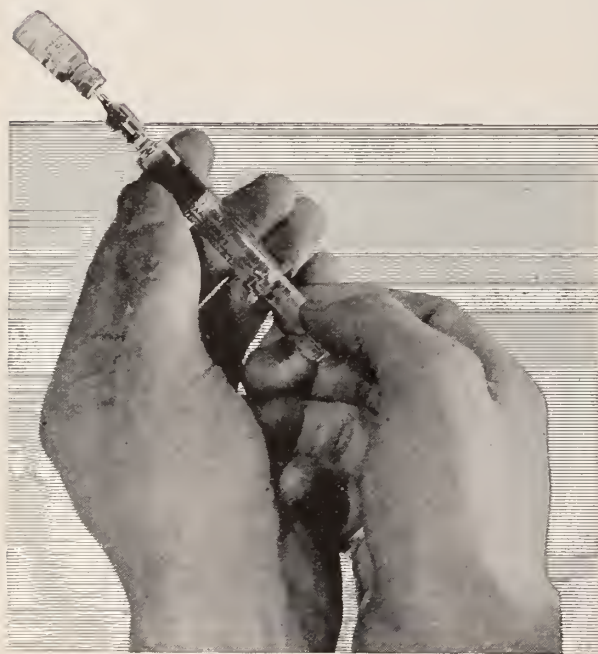
1cc. CONCENTRATED SOLUTION LIVER EXTRACT (PARENTERAL)

Lederle

IN PERNICIOUS ANEMIA, alleviation of symptoms of neurologic involvement—such as ataxia, incoordination, disturbance of the vibration sense, bladder symptoms and hyperesthesias—can be expected from the administration of parenteral liver extract.

Cases of pernicious anemia in relapse, especially those with severe neurologic involvement, require intensive liver therapy. Although the requirements of each case must be considered separately, we suggest an initial injection of two vials (30 U.S.P. units) of "Solution Liver Extract (Parenteral) Lederle" followed in 12 to 24 hours by a similar injection. Subsequently the injection of one vial (15 U.S.P. units) at weekly intervals should be continued until a satisfactory clinical response has been obtained. Maintenance requirements then should be established for each patient.

In 1938, it was decided by Anti-Anemia Preparations Advisory Board of the United States Pharmacopoeia, that liver extracts should be labeled in terms of units. A unit was decided upon as "the amount of material which when given as directed under 'Determination of the Approximate Potency,' under controlled conditions, to a patient with Addisonian pernicious anemia, has in the opinion of the Advisory Board been shown to produce a satisfactory reticulocyte rise, increase in the number of red blood cells and hemoglobin production." "1 cc. Concentrated Solution Liver Extract (Parenteral) Lederle" contains 15 U.S.P. units per cc. and so represents a particularly desirable method of administering liver. Because of its concentration, fewer injections are necessary for the satisfactory maintenance of the pernicious anemia patient and the amount of inconvenience to the patient is minimized.



with a minimum of inconvenience...

*Obtainable only in packages
of three 1 cc. vials.*

LEDERLE LABORATORIES, INC.
30 ROCKEFELLER PLAZA NEW YORK, N. Y.

Pneumococcus Typing Sera . . .

Lederle

THE GENERAL ADOPTION OF SULFAPYRIDINE has been a gratifying and outstanding event in the treatment of pneumonia. It would seem contrary to accepted principles to treat cases of pneumonia, however, without first determining the pneumococcus type.

Furthermore, evidence is now accumulating which shows that in some cases the administration of type-specific sera following treatment with sulfapyridine produces the most favorable results. It appears likely that a combination of sulfapyridine and specific serum may become the established method in the treatment of pneumonia.

The Neufeld method of pneumococcus typing has found general acceptance because of its rapidity and accuracy. Its efficiency can be judged from the recent report of Dowling and Abernethy (Ann. Int. Med., July, 1939) of 180 cases of pneumonia in which the Neufeld test was confirmed by another test and found to be correct in 179 cases (99.4 per cent. accuracy).

"Pneumococcus Typing Sera Lederle" can be obtained in tubes containing five individual tests, or in 1 cc. vials, and is available in six combinations for making preliminary tests and in thirty types for making specific diagnosis of pneumococcus types.

LEDERLE
LABORATORIES, INC.
30 ROCKEFELLER PLAZA, NEW YORK, N. Y.



Lederle Laboratories are sponsors of large scientific exhibits on Allergy and Pneumonia in the Medicine & Public Health Building at the New York World's Fair.

Rogers Memorial Sanitarium

Oconomowoc, Wisconsin

Phone 448

RESIDENT PHYSICIANS

James C. Hassall, M. D.

Medical Director

Donald A. R. Morrison, M. D.

Owen C. Clark, M. D.



For the treatment of NERVOUS and MENTAL DISEASES

Fireproof building; modern, home-like accommodations; beautiful views over lakes. Sixty acres of park. Every essential for treatment provided, including hydro-, physio- and occupational therapy under supervision of trained personnel. Number of patients limited, assuring personal attention from the resident staff.

BOARD OF TRUSTEES

JAMES C. HASSALL, M. D.

FREDERICK PABST
Oconomowoc, Wis.

T. H. SPENCE

MITCHELL MACKIE

MACKEY WELLS

Milwaukee, Wisconsin

PETER BASSOE, M. D.
Chicago, Illinois

W. S. MIDDLETON, M. D.
Madison, Wisconsin

MICHELL FARM



MICHELL FARM

Mild Nervous and Mental
Diseases

MICHELL SANITARIUM

Severe Nervous and Mental
Drug and Alcoholic Cases

Licensed by the State of Illinois

George W. Michell, M.D., Medical Director; Helen C. Coyle, M.D., Psychiatrist
Wm. H. Holmes, M.D., Chicago, Med. Con.

Selected Cases of Schizophrenia (Dementia Praecox) received for Insulin Shock Therapy

Literature on Request • 106 N. Glen Oak Ave., Peoria, Illinois

Illinois Medical Journal

OWNED AND PUBLISHED BY THE MEDICAL PROFESSION OF ILLINOIS
Office of Publication 715 Lake Street, Oak Park, Illinois; Editorial and Executive Office 6221 Kenmore Ave., Chicago

Vol. 76, No. 5

NOVEMBER, 1939

\$3.00 a Year

CONTENTS:

Editorials (For Titles See Extended Table of Contents) 392

ORIGINAL ARTICLES

Diagnosis in Acute Pneumonia. *Courtney N. Hamlin, M. D., Rockford, Ill.*..... 413
General Management of Pneumonia. *M. Herbert Barker, M. D., Chicago.*..... 416
Serum and Drugs Re Pneumonia. *Italo F. Volini, M. D., Robert O. Levitt, M. D., and N. Louis Campione, M. D., Chicago.*..... 420
Roentgen Rays Re Pneumonia. *Edwin L. Rybins, M. D., Bloomington.*..... 424
Pneumonia in Childhood. *Walter M. Whitaker, M. D., Quincy.*..... 426

Bacillary Dysentery. *Louis H. Block, M. D., Chicago, Alexander Tarnowski, M. D., Dixon, and Bernard L. Greene, Elgin.*..... 435
Aluminum Hydroxide Re Gastric Ulcers. *Fredrick Steigmann, M. D., Chicago.*..... 443
Portwine Birthmarks Re Grenz Rays. *Cleveland White, M. D., Chicago.*..... 449
Knotting of Umbilical Cord. *A. T. Lundgren, M. D., and William A. Boyce, Chicago.*..... 451
Pellagra in Chicago Area. *Vernon L. Evans, M. D., Aurora.*..... 458
Fibroids of the Uterus. *A. E. Kanter, M. D., and A. H. Klawans, M. D., Chicago.*..... 459
Multiple Nerve Paralysis. *Theodore T. Stone, M. D., and Alex J. Arieff, M. D., Chicago.*..... 465

(Continued on page 24)

Entered as Second-class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 8, 1879. Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 8, 1917, authorized July 15, 1918.

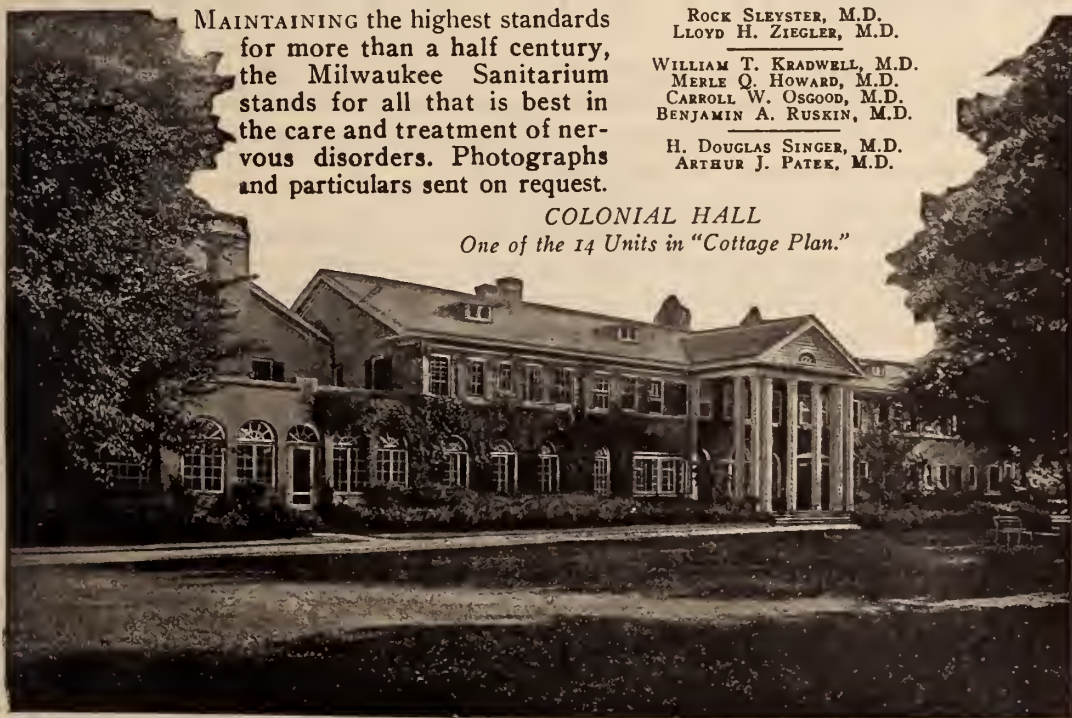
MILWAUKEE SANITARIUM, Wauwatosa, Wis. For NERVOUS DISORDERS

(Chicago Office—1823 Marshall Field Annex
Wednesdays, 1-3 P. M.) Central 1162.

MAINTAINING the highest standards for more than a half century, the Milwaukee Sanitarium stands for all that is best in the care and treatment of nervous disorders. Photographs and particulars sent on request.

ROCK SLEYSER, M.D.
LLOYD H. ZIEGLER, M.D.
WILLIAM T. KRADWELL, M.D.
MERLE Q. HOWARD, M.D.
CARROLL W. OSGOOD, M.D.
BENJAMIN A. RUSKIN, M.D.
H. DOUGLAS SINGER, M.D.
ARTHUR J. PATEK, M.D.

COLONIAL HALL
One of the 14 Units in "Cottage Plan."





W I D E N I N G C I R C L E S



Ever since our research chemists and pharmacologists synthesized Prostigmin it has found ever widening circles of usefulness in medical and surgical practice. First there was abdominal surgery, and a new chapter was written on the prevention and treatment of intestinal and bladder distention. Then came internal medicine and neurology with the amazing development of a really good treatment for myasthenia gravis. Next were the radiologists, who found that pictures are clearer—no gas shadows—if the patient gets Prostigmin before the X-ray series. And now from ophthalmologists we learn of a new and better treatment of glaucoma, and from otolaryngologists we get word of new hope for patients with eustachian blocking, tinnitus aurium, and deafness.

HOFFMANN-LA ROCHE, INC., NUTLEY, NEW JERSEY

We shall be pleased to send physicians the most recent literature on all these subjects:

PREVENTION AND TREATMENT OF
POSTOPERATIVE INTESTINAL
ATONY

PREVENTION AND TREATMENT OF
POSTOPERATIVE URINARY
RETENTION

TREATMENT OF MYASTHENIA
GRAVIS

ELIMINATION OF GAS SHADOWS
FROM X-RAY PLATES

TREATMENT OF GLAUCOMA

TREATMENT OF EUSTACHIAN
BLOCKING, TINNITUS AURIUM,
AND DEAFNESS

PROSTIGMIN 'Roche'

METHODS FOR QUANTITATIVE ESTIMATION OF THE VITAMINS

II. Determination of Ascorbic Acid

● The first practical method for quantitative estimation of vitamin C in foods was that evolved by Sherman and his associates in 1922 (1).

In this technique selected guinea pigs were confined to a scurvy producing ration supplemented with green succulent vegetables—a source of vitamin C—for a suitable period to demonstrate that the animals were growing at a normal rate. The supplementary feeding of succulent vegetables was discontinued when the animals had attained the proper weight, and the feeding of graded daily doses of the material under assay begun and continued over a 90-day period. At the end of this period, the animals were sacrificed and the degree of protection against pathologic changes characteristic of scurvy provided by the various dosages then was determined by dissection and examination of the organs and tissues. The quantity (daily dose) of the food required to prevent incidence of scurvy symptoms—the protective dose—eventually became known as the “Sherman Unit” for vitamin C, or the “minimum protective dose.”

This bioassay technique underwent gradual improvement, both as to the basal ration (2) and as to a numerical system of evaluating and recording the severity of the scurvy symptoms; the so-called “scurvy score” (3). Methods employing shorter assay periods, such as the formal preventive type of assay with a 60-day assay period (4), or a method based upon histologic exami-

nation of the teeth (5), as well as curative techniques (6), have been proposed and used for the determination of vitamin C activity of foods. However, today the improved Sherman bioassay technique employing ascorbic acid as a standard of reference and a relatively long assay period is still regarded as the standard method for vitamin C determination (7).

Some six years ago, a chemical method for ascorbic acid estimation was proposed (8, 9) and immediately came into widespread use. Judiciously and circumspectly used, this method has proven a most valuable tool. By acid extraction of a known quantity of food followed by removal of certain proximate food components, ascorbic acid present in the extract may be quantitatively titrated by a standard solution of 2,6-dichlorophenolindophenol. Under proper conditions this reagent is quantitatively reduced by ascorbic acid to a colorless compound. A faint pink color in the acid solution produced by one excess drop of the reagent indicates the completion of the oxidation-reduction titration.

Development of this chemical method has stimulated many researches on the ascorbic acid contents of foods, among them many canned foods (10). Results of investigations by the chemical or bioassay technique (11) reveal that the canned varieties of foods notable for their natural ascorbic acid contents can also be numbered among the most valuable sources of this dietary essential available to the American Consumer.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

- | | |
|--|---|
| (1) 1922. J. Am. Chem. Soc. 44, 165. | (8) 1933. Ztschr. f. Untersuch. d. Lebensmitt. 65, 145. |
| (2) 1929. Am. J. Pub. Health 19, 1309. | (9) 1933. J. Biol. Chem. 103, 687. |
| (3) 1926. A Study of the Thermostability of Vitamin C. C. L. Kenny, Dissertation, Columbia University, New York. | (10) 1937. U. S. Dept. Agr. Miscellaneous Publication No. 275, 104. |
| (4) 1930. J. Agr. Research 41, 51. | (11) 1922. J. Am. Chem. Soc. 44, 172. |
| 1931. J. Agr. Research 42, 35. | 1925. Ind. Eng. Chem. 17, 69. |
| (5) 1926. Brit. J. Exper. Path. 7, 356. | 1926. Ibid 18, 85. |
| (6) 1933. Biochem. J. 27, 2006. | 1930. J. Home Econ. 22, 588. |
| 1936. Food Research 1, 3. | 1935. Am. J. Pub. Health 25, 1340. |
| (7) 1938. J. Am. Med. Assoc. 111, 1290. | 1938. J. Am. Med. Assoc. 110, 650. |
| | 1938. Ibid. 111, 2138. |

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the fifty-third in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

12 Reasons why!

... THE EMULSION **Petrolagar** FOR CONSTIPATION!

#9

**Assures a more normal
fecal consistency.**

1. Petrolagar is more palatable. Easier to take by patients with aversion to plain oil—may be thinned by dilution.
2. Miscible in aqueous solutions. Mixes with gastro-intestinal contents to form a homogeneous mass.
3. Does not coat intestinal mucosa. Petrolagar is an aqueous suspension of mineral oil — oil in water emulsion.
4. No accumulation of oil in folds of mucosa.
5. Will not coat the feces with oily film.
6. Does not interfere with secretion or absorption.
7. Augments intestinal contents by supplying an unabsorbable fluid.
8. More even distribution and dissemination of oil with gastro-intestinal contents.
10. Less likely to leak.
11. Provides comfortable bowel action.
12. Makes possible five types of Petrolagar to select from to meet the special needs of Bowel Management.

Petrolagar — Liquid petrolatum 65 cc. emulsified with 0.4 Gm. agar in a menstruum to make 100 cc.



Petrolagar

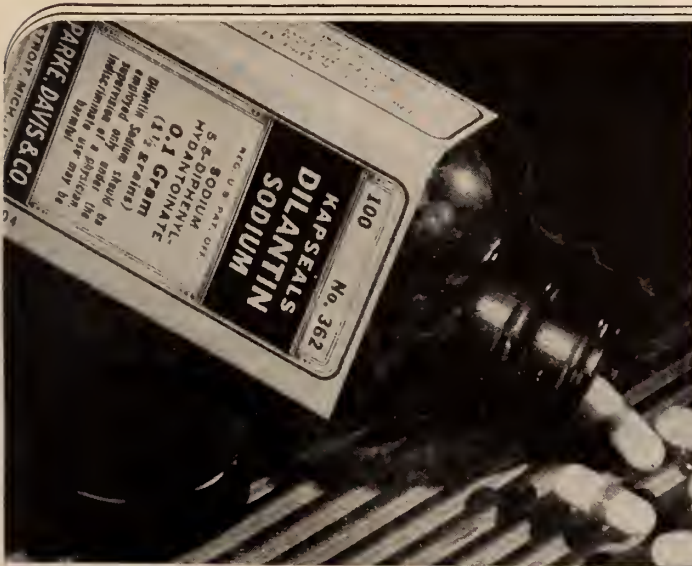
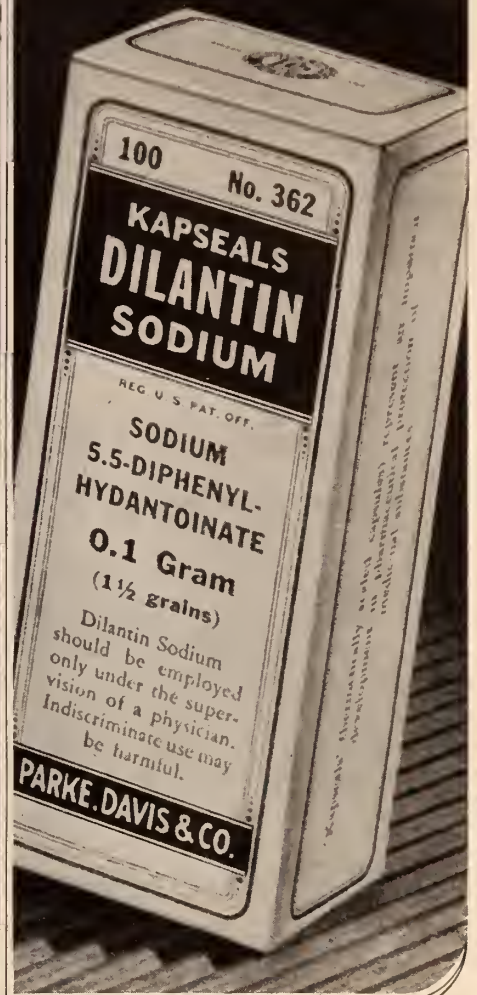
Petrolagar Laboratories, Inc. • 8134 McCormick Boulevard • Chicago, Illinois

AN ANTICONVULSANT FOR THE TREATMENT OF EPILEPSY

KAPSEALS DILANTIN SODIUM★

DILANTIN SODIUM (sodium 5,5-diphenylhydantoinate), an anticonvulsant with little or no hypnotic effect, is supplied for the treatment of epileptics not responsive to other medication. Extensive clinical use indicates that Dilantin Sodium will prevent, or greatly decrease the frequency and severity of, convulsive seizures in a majority of epileptics. However, since the significance of observed reactions to Dilantin Sodium is not fully established, patients receiving the drug should be closely observed.

Dilantin Sodium is accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies.



★ The name 'Dilantin' Sodium designates the sodium salt of diphenyl hydantoin. 'Dilantin' Sodium was formerly known as 'Dilantin,' a term now designating the basic substance, diphenyl hydantoin. Dilantin Sodium is available as 0.1 Gram ($1\frac{1}{2}$ -grains) and 0.03 Gram ($\frac{1}{2}$ -grain) Kapseals, in bottles of 100, 500 and 1000.

PARKE, DAVIS & COMPANY - Detroit, Michigan
The World's Largest Makers of Pharmaceutical and Biological Products



Light area represents a day's energy output by a test subject during the training period before gelatine feedings were started. Dark area represents a day's energy output by the same subject after gelatine feedings. In both cases the subject worked to the point of exhaustion.

Muscular Energy Doubled By **PLAIN KNOX GELATINE (U. S. P.)**

Recent physiological research has confirmed the importance of the phosphocreatine phase in muscle contraction in a group of male subjects, and has shown that energy output can be increased by more than 100% through "concentrated" feedings of plain Knox Gelatine (U.S.P.).

"Proceedings of the Society for Experimental Biology and Medicine", 40:157, 1939.

Knox Gelatine is high in certain amino acids, which are precursors of muscular creatine. Thus, by increasing the phosphocreatine content of the muscle, Knox Gelatine increases its chemical store of potential energy.

The gelatine used in this study was plain Knox Gelatine (U.S.P.) which assays 85% protein and which should not be confused either with inferior grades of gelatine or with sugar-laden dessert powders, for these latter products will not achieve the desired effects. When you desire pure U.S.P. Gelatine, be sure to specify KNOX. Your hospital can get it on order.

EXTRA ENERGY FORMULA

Empty one envelope of Knox Gelatine in a glass three-quarters filled with cold water or fruit juice (or half water and half fruit juice). Let the liquid absorb the gelatine. Then stir briskly and drink immediately before it thickens. Take four times a day for two weeks, then reduce to two envelopes a day. (May be taken before or after meals).

WRITE
Dept. 483

KNOX GELATINE LABORATORIES
JOHNSTOWN NEW YORK

Please send literature on
the use of Knox Gelatine
to increase energy.

Name _____
Street _____
City _____ State _____





AIR RAID ON S.M.A.

Just Before the Can is Sealed . . .

To prevent oxidation or change in the physical or chemical composition of S.M.A., the atmosphere is exhausted from the container and is replaced with nitrogen which keeps the contents — S.M.A. — fresh and sweet in any climate.



The physical and chemical character of S.M.A. is always the same, providing a vitamin A, B₁, and D activity in each feeding that is constant throughout the year.

S.M.A. feedings are always uniform whether they are prepared in Maine or California.

NORMAL INFANTS RELISH S.M.A. — DIGEST IT EASILY AND THRIVE ON IT!

S. M. A. is a food for infants — derived from tuberculin tested cows' milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride;



altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and in physical properties.

VAGINAL LEUKORRHEA

Treat the Condition and Remove the Cause with *Floraquin*



How Supplied

FLORAQUIN POWDER, bottles of 1 oz. and 8 oz., for insufflation in the office.

FLORAQUIN TABLETS, boxes of 12 and 24 tablets, for routine use at home.



A scientific approach to the difficult problem of vaginal leukorrhea of infective origin is presented in Floraquin—a completely restorative treatment.

FLORAQUIN contains the germicide and protozoacide, Diodoquin (5-7-diiodo-8-hydroxyquinoline) together with specially prepared anhydrous dextrose and lactose, adjusted by acidulation with boric acid to a hydrogen ion concentration which maintains a normal pH of 4.0 to 4.4 when mixed with the vaginal secretions.

This combination not only destroys the pathogenic organisms, but in addition replenishes the depleted mucosal glycogen, adjusts the pH and encourages growth of the normal flora.

G. D. Searle & Co.

ETHICAL PHARMACEUTICALS SINCE 1888

CHICAGO

NEW YORK

KANSAS CITY

SAN FRANCISCO

Mandelic Acid Therapy



“... superior to all other forms of medication in urinary infections”

Carroll, Lewis, and Kappel¹ treated 50 pyuria patients and report: “The results obtained indicate that there is a definite value in the drug, superior to all other forms of medication in urinary infections.” Newns and Wilson,² reporting 36 cases of pyelitis in children under 12 years of age, 24 of which were acute, state: “Ammonium mandelate has been given with success and is now being used in preference to other preparations.” Budge,³ Cook,⁴ Lyon and Dunlop,⁵ are among the many others who have reported successful results with mandelic acid therapy.

Convenient, Economical Therapy

Mandelic acid therapy is preferable to the ketogenic diet in many ways. It is consistently more effective and simple to use, does not require hospitalization or dietary restrictions, and seldom produces nausea. It may be used in conditions where the diet is contraindicated, such as in gastric or duodenal ulcer, diabetes, arteriosclerosis, and biliary tract disturbances.

Two Salts in Tablet Form

Squibb Mandelic Acid preparations offer a particular advantage in that they are supplied

in *tablet* form exclusively and are therefore more agreeable and pleasant to take than liquid preparations. Both the calcium and ammonium salts of mandelic acid are available under the Squibb label.

THREE DOSAGE FORMS

Tablets Ammonium Mandelate—uncoated

7½ grains, in bottles of 200 and 1000

3¾ grains, in bottles of 100 and 500

Tablets Ammonium Mandelate—enteric coated

5 grains, in bottles of 200 and 1000

Tablets Calcium Mandelate—uncoated

7½ grains, in bottles of 200 and 1000

To facilitate the control of urinary acidity, Nitrazine Test Paper and color chart are supplied with all bottles. With Nitrazine*—a sensitive indicator—one may accurately determine the acidity or alkalinity of the urine.

* A Squibb trade-mark.

¹ Carroll, G., Lewis, B., and Kappel, L.: *J.A.M.A.* 107:1796 (Nov.), 1936.

² Newns, G. H., and Wilson, R.: *Lancet* 2:1087 (Nov. 7), 1936.

³ Budge, B. G.: *J. Iowa State M. Soc.* 26:553 (Oct.), 1936.

⁴ Cook, E. N.: *Minnesota Med.* 20:512 (Aug.), 1937.

⁵ Lyon, D. M., and Dunlop, D. M.: *Brit. M. J.* 2:1096 (Dec. 7), 1935.

For literature address the Professional Service Department, 745 Fifth Ave., New York, N. Y.

E. R. SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858



THE DIARY OF DR. PEPYS

Up betimes and to the office, there to find before me the Banker Castlemaine who, at the instant of my entrance, declareth himself distressed.

A pompous gentleman, much given to publick dining. He hath for three nights sat late at banqueting, which he will never forego.

I did prescribe Cal-Bis-Ma for him for the quick relief he finds in this fine powder.

... Dr. Pepys is right. When hyperacidity gives rise to gastric distress, Cal-Bis-Ma will give prompt and prolonged relief. Sodium bicarbonate and magnesium carbonate for quick action; calcium carbonate and bismuth for prolonged effect, and colloidal kaolin to adsorb the gas formed in the neutralization process. These ingredients, carefully matched for density, are held together in a colloid base that assures uniform distribution and dosage. Trial supply gladly sent to physicians.

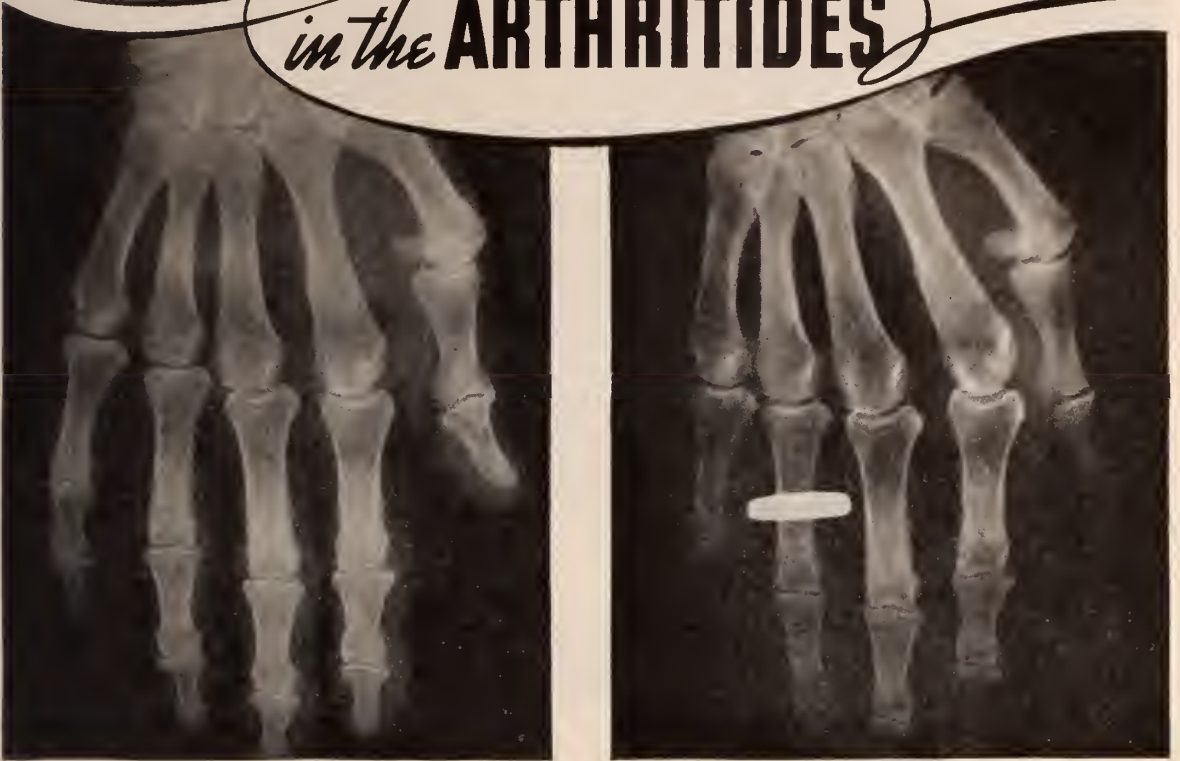
CAL-BIS-MA

A WILLIAM R. WARNER PRODUCT
for gastric neutralization and sedation

Powder in tins of 1½, 4 and 16 ounces; tablets in boxes of 30, bottles of 110

WILLIAM R. WARNER & CO., INC., 113 West 18th Street, New York City

in the ARTHRITIDES



THE response to Ertron therapy in the arthritides is both subjective and objective. Pain usually disappears promptly. Periarticular induration subsides, joint mobility increases, and the general health improves. Coincidentally, in many patients roentgenologic examination of involved joints discloses reparative changes. Prolonged administration of Ertron, even in dosages of 250,000 units daily, produces no alteration of the serum calcium level, and rarely leads to untoward reactions.



Ertron, high dosage vitamin D (Whittier process), is available in capsules containing not less than 50,000 U.S.P. units each. Literature and reprints of published reports on request.

NUTRITION RESEARCH LABORATORIES, Inc.
332 SOUTH MICHIGAN AVENUE • CHICAGO, ILL.

Ertron



SOLUTION FOR A RELUCTANT MATHEMATICIAN

A DOCTOR whose hours are filled with the work of practicing medicine has a perfect right to want to conserve valuable time and effort ordinarily expended on routine detail.

And it is from just such detail—from the month-to-month mathematics of re-aligning baby-feeding formulas—that Biolac, the new, liquid modified milk for infants, brings welcome relief.

*Only The Breast Is Simpler
Or Quicker Than Biolac*

*Dilute Biolac with an equal part of boiled water.
Offer 2½ ounces per pound of body weight daily.*

(Slightly more dilute formulas are, of course, recommended during the new-born period or when changing from other foods.)

And . . . this highly desirable simplicity is by no means all:

In the sum of its nutritional value, ready digestibility, simplicity, and safety, Biolac actually resembles breast milk more closely than any artificial food or cow's milk modification heretofore available for infant feeding.

Biolac is marketed only through professional channels, sold only in drug stores. No feeding directions are given to the laity.

Send coupon for further information.

Biolac



MADE BY
THE BORDEN COMPANY

THE BORDEN COMPANY,
Prescription Products Division, Dept. 1-89-L,
350 Madison Avenue, New York, N. Y.

Please send me without obligation a copy of "Biolac, a New Liquid Modified Milk for Infants."

Name _____

Address _____

City _____ State _____



Cloth and Home-Brewed "Remedies"

Homespun cloth still has its quality appeal but home-brewed remedies are done with. Advanced methods in the art of pharmacy have replaced the rule-of-thumb of the kitchen chemist.

An impressive example of modern exacting compounding is Loraga, in which so fine an emulsification of mineral oil and agar is attained that thorough mixing with the intestinal contents is assured and leakage obviated. A pleasing taste is achieved without artificial flavoring. Absence of sugar, alcohol and alkali in Loraga makes it suitable for all age periods.

Loraga contains no added laxative ingredients. A fine mineral oil emulsion, indeed, in the treatment of the costiveness of children and adults when no active peristaltic stimulation is indicated. You can obtain a trial supply of Loraga by writing for it on your letterhead.

L O R A G A

A PLAIN MINERAL OIL EMULSION AT ITS BEST

A WILLIAM R. WARNER PRODUCT

SUPPLIED IN 16-OUNCE BOTTLES

WILLIAM R. WARNER & CO., INC., 113 West 18th Street, New York City

The Lame, the Languid, the Lazy



Individuals who do not get about much, especially excessive eaters, are often troubled with cumulative effects of constipation. Salines are of benefit, taken at regular intervals, to eliminate the redundant feces which may gradually accumulate.

Sal Hepatica

a scientific saline pharmaceutical acts to provide *liquid bulk* which gently sets intestinal muscles to work to flush the colon of accumulated waste. Its mineral salts combat gastric hyperacidity. Digestion is aided by an increase of bile from liver and gall bladder.

Sal Hepatica approaches the action of famous natural spring waters. Its sparkling effervescence lends superior palatability . . . Samples and literature upon request.



Sal Hepatica Flushes the Intestinal Tract and Aids Nature Toward Re-establishing a Normal Alkaline Reserve.

BRISTOL-MYERS CO., 1933 WEST 50th ST., NEW YORK, N. Y.



TESTED . . . AND PROVED
*measurably
LESS IRRITATING
to the Nose and Throat

**Reprints of studies on the irritant properties of cigarettes are available. Address your request to Philip Morris & Co. Ltd., Inc., 119 Fifth Avenue, New York.*

EXPERIENCE

adds the master touch in the preparation of fine medicinal agents. Only with experience can manufacturing procedures be so perfected that the ultimate in drug and biological purity is approached. The excellence of Lilly Products is a result of long years of well-directed effort and a desire to market nothing but the best.



'Seconal' (Sodium Propyl-methyl-carbinyl Allyl Barbiturate, Lilly)
—'Seconal' fulfills every requirement for a hypnotic in the majority of medical and surgical patients. The action is prompt, the period of sleep is restful, and aftereffects are negligible. 'Seconal' is recommended as a preanesthetic, as a basal anesthetic, and for general medical indications. Supplied in 3/4-grain and 1 1/2-grain pulvules in bottles of 40 and 500.

ELI LILLY AND COMPANY

INDIANAPOLIS, INDIANA, U. S. A.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 76

OAK PARK, ILL., NOVEMBER, 1939

No. 5

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

Editorials

GENERAL OFFICERS, 1939-1940

PRESIDENT.....JAMES H. HUTTON, Chicago
PRESIDENT-ELECT.....J. S. TEMPLETON, Pinckneyville
1ST VICE-PRESIDENT.....J. S. LUNDHOLM, Rockford
2ND VICE-PRESIDENT.....F. H. MULLER, Chicago
SECRETARY.....HAROLD M. CAMP, Monmouth
TREASURER.....A. J. MARKLEY, Belvidere

THE COUNCIL

E. H. Weld.....1st District, Rockford 1941
E. C. Cook.....2nd District, Mendota1941
J. S. Nagel.....3rd District, Chicago1940
L. E. Day.....3rd District, Chicago1942
Percy E. Hopkins,..3rd District, Chicago1941
E. P. Coleman.....4th District, Canton1940
Ralph P. Peairs.....5th District, Normal1940
T. B. Knox.....6th District, Quincy1942
I. H. Neece.....7th District, Decatur1940
C. E. Wilkinson.....8th District, Danville1940
Andy Hall.....9th District, Mt. Vernon....1942
Henry G. Horstman.10th District, Murphysboro ..1942
Edw. S. Hamilton..11th District, Kankakee1941
S. E. Munson.....At Large, Chicago1942
Rolland L. Green....At Large, Peoria1940
Rollo K. Packard....At Large, Chicago1941
Chairman of the Council.....L. E. Day, Chicago

EDITOR

CHARLES J. WHALEN.....25 E. Washington St., Chicago

GENERAL COUNSEL

EDWIN W. RAWLINS.....77 West Washington St., Chicago

LEGISLATIVE COMMITTEE

JOHN R. NEAL, *Chairman*.....Springfield

MEDICO-LEGAL COMMITTEE

J. R. BALLINGER, *Chairman*.....2724 W. North Ave., Chicago
R. O. HAWTHORNE, *Secretary*.....Kankakee

EDUCATION COMMITTEE

R. R. FERGUSON, *Chairman*...4013 N. Milwaukee Ave., Chicago
MISS JEAN McARTHUR, *Secretary*. 30 N. Michigan Ave., Chicago

PERMANENT HISTORIAN

IRVING S. CUTTER.....301 East Chicago Ave., Chicago

SCIENTIFIC SERVICE COMMITTEE

ROBERT S. BERGHOFF, *Chairman*..30 N. Michigan Ave., Chicago
HAROLD M. CAMP, *Secretary*.....Monmouth

PUBLICATION COMMITTEE

HARRY J. STEWART, *Secretary*.....715 Lake St., Oak Park

Outside of editorial or allied views or statements that are the authoritative actions of the Illinois State Medical Society, the organization denies responsibility for opinions and statements published in the ILLINOIS MEDICAL JOURNAL. Views expressed by the various authors and views set forth in various departments in the JOURNAL represent the views of the writers.

State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original article, advertising copy, cuts and all communications relating to advertising to ILLINOIS MEDICAL JOURNAL, 30 N. Michigan Avenue, Chicago.

Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is \$3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. \$4.00 per year for all foreign countries included in the postal union. Canada, \$8.50. Single current copies, 50 cents.

DOCTOR TOWNSEND SAYS:

Terry M. Townsend, M. D., President of the New York State Medical Society, says:

"State medicine, would destroy the right of the sick to pick their own doctors, and it would involve the building of a vast government bureaucracy, highly centralized and autocratic. The physician will be told what to do, he will not be allowed to decide whether he wishes to be a private doctor or a public doctor. He will at all events still be a private in another sense—a private in the rear rank. He will be regimented and marched in close formation or deployed at the command of men expert only in the specialty of public health, with little real experience in the treatment of sick persons. These officials would remain far from the front-line trenches in that sector of the war on disease which means hand-to-hand combat. They would be in their dugouts, well toward the rear, working on maps and charts, and from time to time issuing a terrific barrage of typewritten communiques claiming credit to themselves for every foot of territory gained by you and by me and by the rest of the 135,000 private practitioners of the country, who fight at the very front so close to the enemy that the grim visage of Death is always before us."

SHALL RHEUMATIC FEVER BE MADE REPORTABLE?

Reportability of a disease may be an inverse ratio to the merits of the sequelae involved in such reportability.

This would seem the case where rheumatic fever is concerned. Standing in a debatable zone, both as to origin and possible conquest, there is nothing of accepted record to prove that this actually violent malady with almost unescapable tragic consequences is either,

(a) infectious or contagious;

(b) moderately controllable by enforced prophylactic legislation as are measles, scarlet and many other fevers.

Discussion has arisen because the Chicago Board of Health has now made rheumatic fever reportable.

This ruling refers to that rheumatic fever which is an acute condition in children between the ages of three and seven and is in contradistinction to conditions in adults designated under the blanket term of "Rheumatism," varieties of which include arthritis, gout, neuralgia, neuritis, lumbago, coxhea, arthritis deformans and almost innumerable conditions of debatable origin and in this inclusion the National Health Survey states there were 6,850,000 cases of so-called rheumatism in the United States in 1937.

Health authorities and pediatricians generally accept the definition of rheumatic fever, as that outlined above for this acute condition in juveniles.

Since the ruling of reportability for rheumatic fever has been made, it will be of interest to find out whether that decision is in accordance with the recognized idea as to what diseases should be included in the category of reportability.

Statistics show that the incidence of rheumatic fever is diminishing. The following table shows deaths in Illinois from acute articular rheumatism between the years 1920-1938:

Year	All Deaths	Under 1 Yr.	1 Year	2 Years	3 Years	4 Years	5-9 Years	10 to 19 Yrs.	20 to 29 Yrs.	Over 30 Yrs.
1920....	254	1	4	6	3	33	50	26	131	
1930....	246	2	4	2	2	7	27	51	27	124
1938....	121	..	2	1	3	1	16	34	19	45

Above is a statistical table showing the number of deaths by age attributed to this condition in Illinois in 1920, 1930 and 1938. Deaths in 1938 were substantially lower than in either of the other two years, and only half as many fatalities among children of 10 years was attributed to rheumatic fever in 1938, as in 1920.

Commenting upon this problem, Reginald M. Atwater, M. D.,* Executive Secretary of the American Public Health Association, says:

"I have studied the reporting of rheumatic fever with some care. I am under the impression that nothing would be gained by such reports of cases."

"Citing Atwater* again, he says: "As a student of the epidemiology of rheumatic fever, I find means readily available through hospital and clinic records to estimate the prevalence and

fatality rate. *I believe that the burden of compulsory reporting should be placed on physicians only when something constructive can be accomplished thereby. The uncertainties of diagnosis and the lack of effective control measures makes me confident that it would be futile to make rheumatic fever reportable now."*

That Atwater's idea has many followers may be learned when it is said that a thorough canvass of reporting practices by respective Boards of Health shows that Iowa is the only state requiring that rheumatic fever shall be put in the category of reportability. The reporting of arthritis is not required by any state in the Union.

In the *American Journal of Public Health*, Vol. 29, pages 701-8, for July, 1939, is published an address made April 22, 1939, before the Conference of State and Provincial Authorities of North America, at Washington, D. C., by Dr. Haven Emerson. He is ex-Commissioner of Health, New York City, but still a member of the Board of Health there. At Columbia University, Dr. Emerson is Professor of Public Health Administration, and he is chairman of the American Public Health Association Committee on the Control of Communicable Diseases. In this address Dr. Emerson discussed chickenpox, diphtheria, both amebic and bacillary dysentery, rubella, meningococcus meningitis, typhoid fever, measles, mumps, scarlet fever, poliomyelitis and pertussis. The article ends with this comment:

"The inconsistencies between reasonably exact experience or observation of incubation and communicable periods of these notifiable diseases and much of the regulation of the isolation and quarantine as implied or specified in the publications of state health authorities, and in the main obligatory upon the respective subordinate health jurisdictions of the states, appear to me to be so considerable in number and degree as to justify your attention. In spite of these evidences of somewhat irresponsible exercise of the powers of state health authorities, in this, the oldest field of preventive medicine—a field full of triumphs and general progress—the present status of communicable disease control is encouraging. Still greater success, with less annoyance to the patient, his family and the public can probably be achieved if administrative requirements and practice are brought more nearly into agreement with our knowledge of the natural history of these diseases.

"Among the multitude of obligations, which should be met by state health authorities in the traditional fields of their authorized functions, namely, to do their own work with approximate scientific accuracy, before they attempt the difficult and intricate functions of organized

care of general medical and surgical illnesses, are those which involve the control of communicable diseases.

"It seems to me that the best way to earn merit and the confidence and support of the public for essential health functions is to do the duties now required by law so well, that no reasonable criticism from the public or the medical profession can be brought against you.

"Rather than to encourage the exercise of persuasion and publicity and politics to have new functions and extensive new funds and duties added to you—for which in the main you lack essential experience and professional qualifications—I urge you to serve in the best possible way with your present resources those functions that no one else can carry on under the law—or is so well prepared for as you are."

Figures obtained from 24 hospitals show that the yearly hospital medical admission rate for rheumatic fever shows a progressively diminishing rate from latitude region 50-45 degrees to 34-29 degrees!

Other authorities commenting on rheumatic fever state: "Investigation proves that climatic conditions play a part in the causation and development of rheumatic fever. A questionnaire (A. Seegal and co-workers)¹ sent to representative groups of hospitals throughout North America, as to the number of cases of the disease, number of admissions and number of total admissions over a period of years permit the deduction that "The yearly admission rate (A. Seegal and co-workers)² for rheumatic fever in a selected series of hospitals in the United States and Canada is greater in northern than in southern regions of the continent. . . . Increasing evidence suggests that the hemolytic streptococcus plays an important role in the mechanism of the disease."

Further evidence is available (Coburn and Pauli)³ ascribing etiologic significance to the hemolytic streptococcus in rheumatic fever, the variation in the geographic distribution of the disease based upon limited data presents a problem in specific host and bacterial interaction.

That streptococci may play an important role in the causation (Homer F. Swift)⁴ of rheumatic fever has been the subject of discussion for many years, and recently the possible relationship of hemolytic streptococci has been especially stressed. This is a later finding than that (Wilson and her co-workers)⁵ of a group of investigators that isolation of hemolytic streptococci from the throats of rheumatic and non-rheumatic children, and the occurrence of anti-streptolysins in their serums indicate no relationship

at all between streptococcal infections and rheumatic fever.

In direct antithesis is the identification in the isolation of the streptococci (Coburn and Pauli)⁶ of at least six different types belonging to Group A.

Dr. Lancefield⁷ proved the existence of at least ten different serologic types belonging to Group A among strains isolated from their rheumatic patients. (Griffiths)⁸ reports fifteen different types from rheumatic individuals identified by the slide agglutination technic. In all these cited works the same types were recovered from non-rheumatic patients with streptococcal infection and hence it would appear obvious that none of these strains carry any unique rheumatism inducing properties.

Much attention has been paid in recent years to the relationship (Swift)⁹ between allergy and rheumatic fever. For example, the failure of the many discussed factors to explain completely and satisfactorily the pathogenesis of rheumatic fever has led many observers to the opinion that the disease is due to an undiscovered filtrable virus. In Germany, for years Gräff has actively advanced this point of view. Aschoff, Fahr and their followers show a tendency to agree with him, and in opposition to Klinge's allergic theory. One summary is that rheumatic fever presents protean manifestations, which, when few in number, often makes it difficult to distinguish the disease from closely related conditions, hence it is impossible to characterize the malady too accurately."

Still another authority (Shapiro)¹⁰ insists that it has long been known that rheumatic fever is a markedly familial disease; that the discovery of the etiology will eventually explain the marked familial tendency; that 48.8% of a group of 201 who were examined developed rheumatic fever gradually with no preceding respiratory or throat infection. Over an experience of twelve years it is his impression that the majority of children who complain of leg pains are not suffering from rheumatism, and are in no danger of developing heart disease. As to the expectancy of recurrences in a total of 342 rheumatic children, exactly 178 or 52.1% suffered one attack only; 164 or 47.9% had recurrent attacks. Of these recurrent attacks 44 or 26.8% had recurrences at the end of the first year and a like number had recurrences at

the end of two years. Hence the conclusion that childhood rheumatism occurs most commonly between five and six years of age; the disease is definitely familial and this familial tendency is three times as great in a rheumatic group as in a non-rheumatic group, and the great majority of children who complain of leg-pains are not suffering from rheumatism.

As to these leg pains let quotation be made from Dr. William J. Ball in the *Journal of the South Carolina Medical Association* for July, 1939. The very mild nature of the joint manifestations in many instances has led to the confusion of this condition with the very common and so-called *growing pains*, occurring in childhood; either because of the belief that these pains are actually due to rheumatic fever or because of failure to differentiate them from true rheumatic pains. Children with such pains have been kept in bed for long periods, and even have been said, incorrectly, to have heart disease. Very recently (Hawksley)¹¹ in England, and (Shapiro)¹² in America have reported studies of relationship of these conditions with the conclusion that they are entirely independent, and have given definite criteria for such distinction.

Again we must mention (Dawson & Tyson)¹³ the considerable controversy during the past century over the relationship of rheumatic fever and rheumatoid arthritis. Opinion was more or less divided into two schools—those who believed that here were separate and distinct diseases; and those who maintained that they were different expressions of the same fundamental process. *At present the majority of clinicians both in Europe and in this country consider these two clinical entities as distinct diseases having little or no relation to each other.*

It is well known that orthodox rheumatic fever exhibits a marked familial tendency, and that it is somewhat less generally appreciated that rheumatoid arthritis also shows a definite familial incidence; that rheumatic fever and rheumatoid arthritis tend to occur in the same family. This observation may be interpreted in a variety of ways, it assumes significance only in connection with other evidence of a relationship between the two diseases.

Since the incidence of rheumatic fever (Seegal & Seegal)¹⁴ diminishes the farther south a survey is made until it becomes a relatively rare event in the tropics, the conclusion is that rheu-

matic fever is essentially a disease of the temperate zone. Further it is essentially a disease of childhood, and rheumatoid arthritis is predominately a disease of the adult. There is some evidence however that rheumatic fever and rheumatoid arthritis are intimately related and are possibly different manifestations of the same pathological process. A final understanding of the relationship between rheumatic fever and rheumatoid arthritis will be impossible to achieve until the etiology of both diseases has been definitely established.

The influence of geographic location in the clinical incidence (E. Sterling Nichol)¹⁵ of rheumatic fever and rheumatic heart disease is emphasized by comparing the findings in southern Florida and in New England. During the past five years, the admission rate of rheumatic fever, rheumatic carditis, or chorea in a general hospital in Miami was only one tenth of the rate of Boston during that same period.

Reviewing the literature of the influence of the tonsils on rheumatic infection in children (Albert D. Kaiser)¹⁶ and on the influence of tonsillectomy in rheumatic infections leaves one in doubt as to the exact relationship of the tonsils to rheumatic disease. There appears to be an agreement that infection of the tonsils frequently precedes one of the rheumatic manifestations. On the other hand, many children subject to attacks of tonsillitis do not develop evidences of rheumatic disease.

In a survey of 48,000 children, of whom 20,000 were tonsilectomized and 28,000 were not, it was found that rheumatic fever was considerably less often in the tonsilectomized group, but in this same group muscular rheumatism, or "growing pains" was reported only slightly less. While this set of statistics leaves a degree of uncertainty as to the value of the data it does indicate clearly that rheumatic disease does appear in tonsilectomized children, though it seems probable that in such children initial attacks of rheumatic infection are somewhat less likely developed.

In a scholarly article on "Rheumatic Fever. Incidence and Importance in United States of America," appearing in the *Quarterly Bulletin Health Organ, League of Nations*, Volume 5, pages 247 to 251 for June, 1936, Dr. Ralph Pemberton, chairman of the American Committee on Rheumatism, says in part:

"Although classified as a rheumatic disease because of the frequency of joint involvement, acute rheumatic fever is beginning to be regarded as essentially a disease of the heart, in so far as its most serious aspects are concerned. It is *apparently less frequent than it was thirty years ago*. According to Lambert the incidence rate apparently declined between the years 1906-19. In a study of 1,152 cases, Davis observed a decline in New York between 1897 and 1919. He concluded that in New York City, *wet weather was a definite factor in increasing the prevalence of such diseases*. Many observers believe that climatic conditions pay an important role. *In general, rheumatic fever, is a severer disease in cold regions than it is in tropical or sub-tropical countries*.

"In the United States the disease increases in frequency travelling northward from Florida into Massachusetts. In a study of 500 families made by Irvine-Jones, 32 percent. has multiple cases of the disease. In this series it was shown that even distant relatives manifested the disease in greater frequency than did members of non-rheumatic families. Girls are more easily attacked than boys; it is more common with blondes or with individuals with red hair and also where the father has been the subject of the attack. Brooks and O'Regan hold that the most frequent prodrome is an infection of the upper respiratory tract, and in 5,215 consecutive autopsies Davis and Weiss found rheumatic heart disease in 9 percent.

"Stroud, Goldsmith, Polk and Thorp affirm that there is a familial influence as high as that of tuberculosis. Italians and Hebrews are more susceptible than are children of Irish or of American parents, and out of 428 attacks of rheumatic fever, 61 percent. were between December and May."

"Abstracting still further from Pemberton we read that he feels that the full etiology of rheumatic fever is still in doubt, but that it appears to be related in some manner to infection. He quotes *Collis et al* and *Sheldon et al*, who believe that attacks and relapses occur only after infection with hemolytic streptococcus as outlined. Also the etiologic theory of Clark who suggests that rheumatic fever is not due to the streptococcus but rather to some protozoa or spirochete carried by the rat flea. *Still another school of thought asserts that an imbalance of physiology possibly involving the endocrine system, underlies the syndrome*."

In conclusion Pemberton states that in way of prevention, he feels that under "properly controlled conditions tonsillectomy is justified as a step in the direction of prevention; also that in general acute rheumatic fever remains about as serious a problem as it was twenty or twenty-five years ago, although by no means constituting the scourge presented by chronic arthritis."

The case for rheumatic fever is far from being a closed one. The obscure etiology is, however, undisputed.

In the *Nebraska State Medical Journal* for September 1939, Dr. Edward Thompson writes "Unfortunately the specific etiology of the disease is not clear. The clinical studies regarding

so many of the important factors have been so well studied that the relationship of a 'virus' or 'Streptococcus' is not readily established in spite of many attempts to find the true etiology." He cites the incidence of rheumatic fever in an autopsy percentage in the following table in confirmation of the partiality of this disease to colder climates.

Peter Bent Brigham-Boston	Charity New Orleans	University Omaha
4.67%	.23%	4.27%

He adds that in the out patients Childrens Heart Clinic of Omaha that Henske found the cases of rheumatic heart disease, totalled only 3%, and that in the Childrens Memorial Hospital of Chicago, "rheumatic heart disease accounts for the occupancy of about one fifth of the beds."

Another voice from the south dealing with this question came from Carroll M. Pounders and James K. Gray when they wrote in volume 32 1939 of the *Southern Medical Journal* that the "*term rheumatism has been used loosely to include all sorts of ailments affecting the nerves, muscles and joints, and to include conditions of varied etiology such as arthritis deformans and septic arthritis as well as rheumatic fever. So the present discussion is limited to that definite disease entity that usually has its beginning during childhood and in which the joint involvement represents only one of several manifestations*. It is known now that the condition is a systemic disease that invades various tissues of the body but affects chiefly the heart, the joints and their surrounding structures, the nervous system and the subcutaneous tissues. Figures are difficult to secure but it is generally estimated that this disease makes up from 3% to 7% of the medical diseases observed in children's hospitals. While the direct etiological agent is unknown as has been said, recent studies throw considerable doubt on the once prevalent idea that upper respiratory infections, more particularly sore throat and tonsillitis were more directly related to rheumatic infections. Many cases in fact, are seen in which tonsillectomy had been done long before the initial onset. What makes recognition of great importance is that statistics show that from 60% to 70% of these children have involvement of the heart and undoubtedly cardiac disease is the first manifestation in a certain per cent of them."

Another report (R. Ash)¹⁷ is to the effect that

the course of rheumatic infection as observed in 445 children during the years from 1922-32 at the Childrens Hospital, that 93% were kept under observation for an average period of seven and one half years after the onset of the disease and at the end of that time 66% presented valvular heart disease!

Harking to the voice of British medical men on the disease it is noted that in the *Lancet*, vol. 2, page 411 for Aug. 24, 1935 K. Douglas Wilkinson says that in regard to the causative agent the bacteriological findings and various experiments with toxins and anti-bodies all point to streptococcic infection as the predisposing cause. It is certain the organism is not pyogenic; it is probable that it is non-hemolytic, and that it may be a saprophyte, harmless under normal conditions and that may become virulent under special and as yet imperfectly understood circumstances.

Four years later, in the *Lancet* for Feb. 25, 1939, J. Allison Glover writes that one attack affords no immunity, particularly in children, to progressively severe occurrences, and this is of paramount importance to the consideration of control. It is a specific infectious disease with the infectivity of low order.

Statistical table showing deaths in Illinois reproduced above reveals that there has been an encouraging decline in the disease in this state between the years 1920 and 1938.

The inference drawn from all the surveys tends to show that its etiology is still a mystery rather than a scientific formula. Also that the disease is decreasing and that there is no evidence that it is transmittable to others by direct contact or by carrier and as such in the minds of some there is doubt as to why the disease should have been placed on the reportable list. However the law in regard to reportable diseases is that diseases may be made reportable by statute or through the regulatory power delegated by statute to the State Department of Health, which may promulgate regulations under such delegated authority and when these have been published or posted in accordance with the law they have the power and effect of law.

Let it be repeated, study of research into rheumatic fever fails to set forth any definite cause as to why the disease should be put into the reportability category. It is as mysterious as the etiology of the malady itself.

BIBLIOGRAPHY

1. Seegal, David; Seegal, Emily Beatrice Carrier; and Jost. "A comparative study of geographic distribution of rheumatic fever, scarlet fever and acute glomerulonephritis in North America"; *American Journal of Medical Sciences*, 190: 3, Sept. 1939.
2. *American Journal of Medical Sciences*, 190: 3, Sept. 1939.
3. Coburn, A. F., and Pauli, R. H.: Studies on the relationship of streptococcus hemolytic streptococcus in relation to the epidemiology of rheumatic fever; *Journal Experimental Medicine*, 56: 609, 1932.
4. Homer F. Swift: *Jour. Lab. & Clin. Med.*, 3: 1936.
5. Wilson and her co-workers; *Jour. Clin. Invest*; 14: 325, 1935 and 333 and 345, 1935.
6. Coburn and Pauli: *Jour. Exper. Med.*, 56: 609, 1932; 56, 633, 1932; 56, 1932.
7. Lancefield, R. C.: Serological Differentiation of human and other groups of hemolytic streptococci. *J. Exper. Med.*, 57: 571, 1933.
8. Griffiths: *Journal Hygiene* 34: 542, 1934.
9. Swift: *Jour. Lab. & Clin. Med.*, 3: 1936; 21: 551-62.
10. Shapiro: *Jour. of Lab. Clin. Med.*, March, 1936
11. Hawksley, J. C.: "Growing Pains and Rheumatism; *Brit. Med. Jour.*, 1: 155; Jan. 28, 1939.
12. Shapiro, M. J.: "Growing Pains" and Subacute Rheumatic Fever; *Jour. Pediatrics*, 14: 315-22, March, 1939, and *Jour. Lab. & Clin. Med.*, 21: 564-74, 1936.
13. Dawson & Tyson: *Jour. of Lab. & Clin. Med.*, March, 1936.
14. Seegal & Seegal: *Jour. A. M. A.*, 89: 1927; and Coburn, Williams & Wilkins Co., Baltimore, 1931.
15. Nichol, E. Sterling: *Jour. Lab. & Clin. Med.*, March, 1936.
16. Kaiser, Albert D.: *Jour. Lab. & Clin. Med.*, March, 1936.
17. Ash, R.: "Rheumatic Fever, Prognosis: Statistical Study." *Am. Jour. Dis. Children*, 52: 250-295, August, 1936.

HORACE WELLS, DISCOVERER ANESTHESIA. NINETY-FIFTH ANNIVERSARY TRIBUTE

The public has recently witnessed two attempts^{1, 2} to discredit the established reputation of Dr. Horace Wells, Dentist, of Hartford, Connecticut, as the discoverer of anesthesia. These garbled half truths and historical inaccuracies were previously considered and answered by earlier writers^{3, 4, 5, 6, 7, 8} and more recently refuted in current periodical literature.^{9, 10, 11, 12, 13, 14, 15, 16, 17} The occasion of the 95th anniversary of the discovery occurring on December 11, 1939, therefore, affords an opportunity to review briefly some of the highlights of the Wells career.

Horace Wells was born at Hartford, Windsor County, Vermont, on January 21, 1815. After a liberal education in select schools and academies, he started in 1834 the study of dentistry at Boston in the offices of established practitioners, this being the vogue at this time, preceding the inauguration of dental schools. During the next two years he prepared himself for his chosen profession and in 1836 finished his training. He

opened and conducted an office for a short time in Boston. Later that year, he moved to Hartford, Connecticut, where within a short period of time he firmly established himself as an outstanding and capable member of the profession. His first book,¹⁸ was published in 1838 and gained for him the respect and admiration of his professional confreres. About 1840 Dr. Wells began experimenting with nitrous oxide gas as an anesthetic in surgical operations. Under his direction, John M. Riggs and William T. G. Morton were given dental training during 1841-43. Both men later acquired fame individually for their professional attainments. With Morton as a co-partner, he operated another office in 1843 at Boston to popularize one of his inventions for soldering teeth to dentures.

Witnessing an exhibition of "laughing gas" in Hartford at a public lecture given by Gardiner Q. Colton on December 10, 1844, he visualized its pertinent application to medical, dental and surgical operations for the relief of pain. He promptly arranged for a demonstration at his own office the following morning when one of his molars was removed painlessly by his partner, Riggs. Here on December 11, Horace Wells underwent the first extraction of a tooth under nitrous oxide gas, thus giving to suffering humanity the boon which it had long sought. On this unforgettable day, ninety-five years ago, anesthesia was conceived, demonstrated and proclaimed by Wells. Together with Riggs, he experimented with both nitrous oxide and ether, but on the advice of his associates, he preferred the former as more suitable for short dental operations. During the following month, he visited Boston in order to lay this innovation before the medical faculty there and thus permit his discovery to be "as free as the air we breathe." Unfortunately, due to excitement and the fact of having to perform the dual role of anesthetist and extractor, his demonstration was only partially successful. His patient did cry out, yet admitted afterwards that he felt no pain.^{3, 4} Few of those medical students present on this occasion fully understood the manifestations of patients in this anesthetized state and therefore attempted to belittle Wells and his work. He returned soon after to his home in Hartford and except for brief periods during 1845 and 1846, when he found it necessary to relinquish his profession due to a chronic physical ailment, Wells

continued, until his death in 1848, to administer the gas for surgical and dental operations. He never, as has so often been claimed, abandoned his favorite anesthetic or his profession.

Full recognition of his work came to his name from the Connecticut Legislature, the city, county and state medical and dental groups, the New York Medical Society, Boston Gynecological Society, American Medical and American Dental Associations, English Dental and Medical professions, Parisian Medical Society, Spanish Odontological Society, and International Dental Federation.^{13, 15} Memorials have been commemorated in Paris, Chicago, Washington and Hartford.¹⁵ Countless tributes have been recorded in literature during the past century.¹⁵ He remains, despite assertions for other claimants, the recognized discoverer of anesthesia. This sentiment has been well expressed in an engrossed resolution received by his widow from his professional confreres of England in 1873, which declared: "The world is indebted to him (Wells) not only for the introduction of nitrous oxide as an anesthetic but for having given that impetus to the study of Anesthesia which has resulted in the introduction of ether, chloroform and other agents for affecting this object."¹⁵

Dr. Wells' published works included "A History of the Application of Nitrous Oxide Gas, Ether, and Other Vapors in Surgical Operations." (1847)

BIBLIOGRAPHY

1. Fulop-Miller, Rene: *Triumph Over Pain*. Indianapolis, Bobbs-Merrill, 1938.
2. Flexner, James T.: *Doctors on Horseback*. N. Y. Viking Press, 1937.
3. Anon: *An Examination of the Question of Anesthesia, Arising from the Memorial of Charles Thos. Wells*. Thirty-Second Congress, Second session. Pub. Wash., D. C., 1853.
4. Smith, Hon. Truman: *An Inquiry Into the Origin of Modern Anesthesia*. Brown and Gross. Hartford, 1867.
5. McManus, James: *Notes on the History of Anesthesia; The Wells Memorial Celebration at Hartford, 1894; Early Record of Dentists in Conn.* Clark and Smith, Hfd., 1896.
6. Anon: *The Discovery of the late Dr. Horace Wells of the Applicability of Nitrous Oxide Gas, Ether and Other Vapors in Surgical Operations, nearly two years before the patented Discovery of Drs. Chas. T. Jackson and W. T. G. Morton*. Case & Tiffany Co., Hfd., 1850. (Original Manuscript, by Hon. Isaac Toucey. Conn. Hist. Soc.)
7. Wells, Horace: *A History of the Discovery of the Application of Nitrous Oxide Gas, Ether and Other Vapors to Surgical Operations*. J. Gaylord Wells, Hfd., 1847.
8. Anon: *Memorial Services at the 50th Anniversary of the Discovery of Anesthesia by Dr. Horace Wells by Odontological Society of Pennsylvania*. Patterson and White, Phila., 1896.
9. Merritt, Arthur H.: *Discoverers of Anesthesia*. Dental Cosmos, Vol. 69, No. 1, January, 1927.
10. Anthony, L. Pierce: *Connecticut's Contributions to Dentistry*. Dental Cosmos, Vol. 78, No. 1, Jan. 1936.

11. Jacobs, Walter H.: Horace Wells, Dental Cosmos, Vol. 77, No. 9 September, 1935.
12. Wells, Chas. J.: Horace Wells. Current Researches in Anesth. & Analg., Vol. 5, No. 7-10, July-October, 1935.
13. Soifer, Max E.: Horace Wells Triumphs Over Pain. J. A. D. A. Vol. 26, No. 3, March, 1939.
14. Soifer, Max E.: Horace Wells Points the Finger to Anesthesia. Dental Items of Interest, Vol. 61, No. 3, March, 1939.
15. Soifer, Max E.: Dr. Horace Wells, The Discoverer of Anesthesia. Address, Annual Meeting, Med. Library Assoc., Newark, N. J. June 28, 1939.
16. Steiner, Walter R.: Horace Wells and His Discovery of Anesthesia. Jour. Conn. State Med. Soc., Vol. 2, No. 11, November, 1938.
17. Nevin, Mendel: Editorial. Dent. Items of Int., Vol. 61, No. 6, June, 1939.
18. Wells, Horace: An Essay on Teeth, Comprising Their Formation,, Disease and Proper Treatment. Case, Tiffany Co., Hfd., 1838.

RUSH MEDICAL COLLEGE TO BECOME GRADUATE MEDICAL SCHOOL

This announcement was made October 3rd by the President of the Chicago University as follows:

The University of Chicago has decided to terminate undergraduate medical education at Rush. The Board of Managers of Presbyterian has voted that the hospital remain in its present location on the west side of Chicago.

As a result of these decisions, the University will establish a program of graduate medical education at Rush. Committees will be appointed shortly to formulate plans for the graduate school, which it is hoped will be opened in the near future.

The graduate school, it is contemplated, will emphasize research in medical science, and provide training for graduates of medical schools in the various fields of specialization.

Undergraduate work will continue, however, at Rush for the next three years, through July, 1942, to provide completion of training for the class entering next autumn (1940). Undergraduate training also will continue at the south side medical school, and after 1942 will be offered there exclusively.

Decision to establish Rush as a center of graduate medical training terminates discussions as to the ultimate status of Rush which have been carried on intermittently since 1916. In that year the University approved plans for the south side school, which was opened in the autumn of 1927.

Rush Medical College, chartered in 1837 and in operation since 1842, was the pioneer medical school of the Middle West. Rush merged with

the University in 1924 after twenty-six years of affiliation. It has established a distinguished reputation, particularly for the training of practitioners. Its staff, drawn from leading physicians in active practice, who give part time to instruction, has made many important contributions to research.

HOSPITAL WILL REMAIN

It also was made known that the Presbyterian hospital, which has been closely associated with Rush Medical College since 1842, when the college was founded, will remain in its present quarters at 1753 Congress street.

The staff of the Presbyterian hospital now forms the faculty of Rush Medical college. All are active in practice and are part time instructors. Because of this connection the future of the two institutions often has been considered as a unit, and it once was proposed that the hospital be moved to the university campus and kept in close touch with the medical school founded there in 1927.

PLAN IS GIVEN UP

This plan was dropped, however, largely because of the expense involved. Another consideration, important to the faculty, was that opportunities for clinical training of students would not be so great on the south side as in the present location, which is near the County hospital. Rush College alumni have opposed abandoning the college as a training place for undergraduates.

DOCTOR KNOX JOINS STAFF OF SOLDIERS' HOME

Dr. Thomas B. Knox, councillor of the Sixth District, Illinois State Medical Society member of the Adams County Medical Society and of the American Medical Association and a member of the American Legion has been appointed a member of the medical staff of the Sailors' and Soldiers' Home, located at Quincy, Illinois.

Doctor Knox is a widely known Quincy physician and was a member of the staff of the same institution thirty-four years ago, as a part time member of the surgical staff.

While Doctor Knox's duties will be somewhat similar to those he performed at the Soldiers' Home in 1905, they will be performed under different circumstances because of the great improvements that have been made in caring for

the sick and injured in the two model hospitals opened during the last few years.

Doctor Knox started to practice in Quincy in 1902 after his graduation and three years later was appointed to the Soldiers' Home staff as a part time surgeon under Captain William Sommerville when the appointment was made full time service, four and a half years later, Doctor Knox resigned because of his large private practice. Doctor Knox continued his practice until the outbreak of the World War. He enlisted in Quincy in the medical corps and left here on July 4, 1917, was stationed at Camp Dix, N. J., for a year, was made commanding officer of the 312th ambulance company which was a part of the 78th division when the outfit went overseas.

The company consisted of 123 men and 13 ambulances and served in the front line trenches during the war. Members saw services in all major battles, including the Saint Mihiel and Argonne drives. Doctor Knox was honorably discharged with the rank of major at Fort Sheridan, Ill., in September, 1919, when he returned to Quincy to resume general practice.

NOTIFIED BY BOWEN

Notified of the appointment by A. L. Bowen, director of the department of public welfare, Doctor Knox said his offices in the Majestic building will be closed. Later, Doctor and Mrs. Knox, who are now residing at Hotel Newcomb, will occupy an apartment at the home reserved for members of the medical staff.

ANY DELAY IN TREATMENT OF APPENDICITIS IS DANGEROUS

Death and serious illness from appendicitis increased notably during the past few years as compared to the more prosperous 1920's, and this unhappy state is due chiefly to fear of the cost when funds were low, according to the "Journal" of the American Medical Association. Directly or indirectly, lack of money for extra expenses due to illness, and fear of being away from work caused many people to "stall along" when they had pain around the stomach, the magazine pointed out.

The "Journal" said the public must be educated not to take any chances with appendicitis, since it can be controlled if caught in time. If the patient cannot spend the money, he must pocket his pride and seek treatment anyway, for a few hours' delay spells the difference between life and death.

One of the worst evils in postponement of treatment because of finances is the tendency of people to "dope" themselves, specially with laxatives, the most dangerous

thing possible. This merely hastens the need for surgery.

According to Drs. F. R. Kelly and R. M. Watkins of Cleveland, records of the patients studied showed that those ill during the prosperous years were sick 3.8 days before operation; those ill during the depression years were sick 4.8 days before surgery—in many cases a fatal delay. Of those delaying operation during the boom period, 42 percent took laxatives and other self-medication; during the depression, 67 percent tried to treat themselves this way.

That delay is dangerous is shown by the following figures: Of the acute appendicitis cases for the group studied during the depression, 28 out of 190 were operated on less than 24 hours after the rupture of the appendix, with death rate of only 3.5 percent; of the 86 operated upon 48 hours after the rupture, 32 percent died.

Delay in having appendicitis properly treated because of poverty need never be a factor if a person carries a liberal disability insurance contract, paying his expenses and continuing his income, written by a sound organization. "Mutual Benefit" policyholders do not have to dose themselves and gamble with death because they "cannot afford to go to the doctor" if they have an acute pain in their abdomen.

YOUR FAMILY DOCTOR

In our country today the average citizen is still able to select a doctor in whom he has confidence, and who will feel that his duty to his patient is paramount to all other obligations. For some time our doctors have been concerned over the threat of socialized systems of medicine which would destroy individualism, inhibit initiative, and place the politician between the doctor and the sick who call on him for relief from suffering and the cure of disease. Today the quality of medical service in the United States is better than that available in any other large nation in the world. This record is the result of the application of the individual principle to medical practice and is the chief factor which distinguishes American medical practice from that in many other countries. Our doctors are concerned with giving more and better medical care to all the people. It is an obligation which they have never denied in the past, and which they will be proud to continue under the present system.—Petrolagar Laboratories, Inc.

The permanent basis of medicine is not its research, but its application, or practice. What I ask is not any decrease in medical research but that medical research and medical practice be recognized as distinct but equally important, equally skilled, equally valuable parts of medicine as a whole. I ask that we may recognize that a physician may be a great doctor without doing original and basic laboratory investigation; that such research belongs to the research investigator and practice to the practitioner. And most of all, I hope that we will go back to the training of medical students clinically by great clinicians to be great clinicians.—H. W. Haggard, M. D., Physiologist, Yale University.

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
Ralph Peairs, M. D.

Edited by the Committee on Medical Economics
of the

Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

Address all letters and communications to the Chairman.

R. K. Packard, M. D.
C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

As headlined in the *Chicago Tribune* of October 24, 1939, "Supreme Court Gives New Deal Another Rebuff," the United States Supreme Court on October 23 refused to review the decision of Federal Judge James M. Proctor dismissing the antitrust indictment of four medical groups and twenty-one physicians on July 26, 1939. Judge Proctor dismissed the indictments on the ground that the practice of medicine is a profession and does not come under the Sherman Antitrust Act, which applies only to business and trades. The Department of Justice had filed an appeal with the Court of Appeals but sought to expedite action by asking the Supreme Court to pass on the case directly. This action was not opposed by the physicians indicted or the organization accused, all expressing confidence that the decision of the lower Court will be upheld. The appeal will now be heard in the Court of Appeals in Washington. From there it may be taken through regular channels to the Supreme Court, for a final decision. Of course the decision of the Supreme Court is encouraging, but it is in no way final and the medical profession should not lose sight of the fact that the Department of Justice will continue to push the suit and harass the medical profession. While there is practically nothing that the medical profession can do as individuals in this appeal. The American Medical Association, through its House of Delegates, has by unanimous consent decided to oppose the Department of Justice to the final court of appeal if necessary.

The position of the medical profession as individuals, is entirely different in regard to the Senate Bill 1620, so-called Health Bill of Senator Wagner. While to all intents and appearance it slumbers peacefully in Committee, while the Senators talk about the neutrality bill, its proponents are continuing to push it quietly in the many devious ways known only to politicians, so that it can be again pushed in the coming regular session of Congress beginning about the

20th of January next. An article from the pen of H. P. Saunders, M. D., Secretary of the Chicago Medical Society, appeared in the *Bulletin of the Chicago Medical Society* of October 21, 1939. It is most timely and well written and we hope to print it in this column immediately following this article, provided the necessary approval is obtained from him in sufficient time to make the arrangements before the deadline date. It is most encouraging to get new writers interested in this subject, for every man has a different manner of presentation of the subject. This article is most vigorous and stimulating. It should make many of its readers realize that they have a responsibility in this fight against socialization not only of the medical and dental profession, but of the entire framework of our government. In the September 18 issue of *The United States News* under the title "Unfinished Business of Congress" is an article on "Improving National Health." It is a good summary of the present status of the work in Congress up to this time. One paragraph states, "But the more controversial features of the program—medical care for those unable to obtain adequate professional service, construction of hospitals and compensation for temporary and permanent disability—have still to run the gauntlet of Congressional debate." This is encouraging in a paper of admitted reformative tendencies, for it tells us that there is still doubt in their minds as to whether the so-called health bill will pass. We must remember that S. B. 1620 is only one of the bills that have been presented on this subject, some more objectionable than 1620 and some less so. Senator Taft has intimated that he may have one to present in the event that none is presented by the medical profession. So the threat of legislation continues and each of us should do our share to convince our Senators and Representatives by able arguments, supported by facts that such legislation is neither necessary nor for the best interests of the people of the United States.

At the above referred to meeting of the Council, the work of the Maternal Welfare Committee of the Illinois State Medical Society during the current year was discussed. Attention was called to the meeting to be held at Springfield on November 5, 1939, where the activities of a similar Committee in a neighboring state is to be reported. It is to be hoped that there will have been a good attendance at this meeting which will have been held prior to the receipt of this issue of the *ILLINOIS MEDICAL JOURNAL* and that a definite program will have been decided on. The consensus of opinion at this meeting was that the work has rather slowed down due probably to lack of interest on the part of the medical profession at large and not on the work of the Committee. It seemed necessary to arouse new enthusiasm in the medical profession and a new plan of delivering the needed information to those most in need of it. Somehow it seemed that this latter had not been accomplished up to this time.

The Sub-committee of this Committee, appointed to study the subject of Voluntary Health Insurance Plan in the United States under the Chairmanship of Dr. Hartman of Macomb, will have a preliminary report of their work in the December issue of the *ILLINOIS MEDICAL JOURNAL*. They are now busily engaged in an appraisal of the Michigan plan. They hope to have a recommendation ready for the entire Committee's study early in the year, so that definite action can be taken at the annual meeting of the House of Delegates at Peoria next May.

Early in October the Champaign County Medical Society held a regular meeting. The subject under discussion was Medical Economics from the viewpoint of a general practitioner, legislative viewpoint, and the Public Health Service. The speaker on the last named subject was very pessimistic as to the future of the practice of medicine as an individual private business and suggested since radical changes would occur anyhow that the medical profession should join in the proposed plans and endeavor to cooperate with governmental agencies. This was quite a shock to the majority of the hearers, and one cannot help but wonder whether the opinions advanced and the advice given was personal or represented that of the Public Health high officials. If the latter surmise is correct, the amount of work needed on the part of the medical pro-

fession to successfully oppose such propaganda is greatly increased.

E. S. Hamilton, M. D.,
Chairman.

DO YOU WANT TO FIGHT?

With everyone reading and talking of war, the American medical profession has gone into a quiet siesta while its most powerful enemy of all time is girding its strength for another mass attack. The Wagner Act has not been defeated; Socialized Medicine is still knocking at our door. That knock will soon become more insistent and be followed by the demand to "open in the name of the law." The next Congress will surely reopen hearings on the Wagner Act or similar legislation, and its backers will have learned many things about our defenses from the previous attack. They have studied those defenses minutely and will concentrate on their weaknesses. We cannot afford to be lulled into a false feeling of security by the silence of the enemy. We must arouse from our lethargy and prepare our defenses for the next onslaught—even a far more tactical move would be for us to choose this time to launch a vigorous attack of our own!

What is to be our point of attack? What have we learned of the weaknesses of our enemies? Many weaknesses have been discovered. Many failures of Socialized Medicine have been recorded. The medical and allied professions should concentrate our attack on those weaknesses. Let the torch of publicity brighten the corners where those failures are being hidden away. *Education is our only hope!*

Dr. Nathan Van Etten, President-elect of the American Medical Association, in his acceptance speech to the House of Delegates said: "Yesterday you adopted a report defining your position in relation to the proposed Wagner Health Bill. It will have small value, however, unless the whole medical profession of the United States is educated fully to understand it. Every delegate must realize his official obligations as never before and carry home to every single practitioner in his state a full consciousness of the importance of this declaration of principles. That practitioner is potentially one of the most powerful persons in the democracy. If he can be made to see his duty to his country and educate his patients to a realization of the

dangers of centralized control of medical practice, your action of yesterday will be sustained. In the name of welfare, gentlemen of the House, the practice as you know it and as you hoped it would become is to be destroyed. The functions of the most highly educated group of professionals in the world are to be taken over by bureaus operated by adventurous amateurs. The time has come for the concerted action of every doctor in the United States."

Education of physicians is not enough! The Woman's Auxiliary, the Hospital Associations, the Druggists Associations, and Dental Societies and all other allied professions must be aroused to the fact that socialization of medicine also seals their doom. When they are made aware of this fact by proper education they will form some of our strongest divisions for attack. They in turn with their contacts with service clubs, social organizations, and personal contacts will be our greatest factor in informing the voters of this country that medical service cannot be adequately rendered by a regimented group of pen pushers and form filling clerks. It must be rendered by physicians. It must be rendered by physicians who can think for themselves. It must be rendered by physicians who have the independence to act for the best interest of the patient, unfettered by regulations issued by arm chair officials and distant departmental dictators.

The voters of this country must be advised of the dangers and weaknesses of Socialized Medicine. If we can fortify ourselves with the strength of this knowledge in the minds of the voters before those honeyed tones begin emanating from every radio in the land during the next political campaign, with campaign promises of free medical care including hospitalization, recuperation and remuneration for everyone who thinks he is ill, we have installed our forces in an impregnable fortress. Let the people know that under socialized medicine they are to be treated as numbers rather than patients. Let them know that free choice of physician and hospital is to be taken away from them. Let them know that the expense, which must be taken from tax money paid by them, will be in excess of twenty dollars per individual per year, and radio dials will spin so fast getting another station when a candidate dares broach this subject that the repair shops will be rushed with orders for new parts.

Now the next time that physician friend of yours buttonholes you in the doctor's room of the hospital or in the corner drug store and begins to bemoan the fact that it's time "they" do something about stopping this State Medicine, just ask him how many service clubs or local gatherings, or even individual voters he has enlightened on the subject. It is not time "they" do something, it's time *you* do something. *This is your fight. If you want to fight, get into it.*

W. P. Saunders.

Correspondence

HONOLULU FROM A MEDICAL AND OTHER VIEWPOINTS

Chicago, Ill.,

October 1, 1939.

To the Editor: Recently I had the privilege of participating in an unusual program of medical economics. For some time a friend of mine had been urging me to come to Honolulu to see a number of patients having various endocrine disorders. None of these were able to come to the States for diagnosis and treatment, nor to pay me for going there. But it was thought that if each paid a reasonable consultation fee, the aggregate would be sufficient compensation for the trip.

This principle might well be applied in smaller communities. Consultants have had the experience of going a considerable distance to see one patient. The consultant's expense in time and money was sufficient to embarrass the patient. But if the same consultant could have seen two or more patients he could have charged each less and still have received a more adequate fee himself.

As time was limited, it was decided to go by air. I left the Municipal Airport at 10:25 P. M., September 6, arriving in San Francisco the following morning at 10:30—two hours late, due to head winds. This part of the trip was very rough. After leaving Denver we flew at an altitude of 14,000 feet. The altitude and the roughness combined caused severe headache and nausea. Altitude is said to cause marked retardation of the mental processes. Whether or not this is true, I do not know, but certainly on the second morning my mental apparatus was oper-

ating at very slow speed and it required about twenty-four hours to recover my equanimity.

Because of storms at Guam the preceding trip, the regular weekly schedule was delayed one day. The Clippers do not fly in storms. We left Treasure Island at 5:40 P. M., September 7, on the China Clipper, which is one of the oldest and smallest clippers, weighing only 28 tons as against 42 tons, the weight of the newer California Clipper, and arrived in Honolulu the following morning at 8:30, crossing at an altitude of 10,000 feet.

The Public Health aspect is one of the most interesting features of the islands. The Health Department was organized by the medical society and is largely controlled by it. Only a man holding the degree of Doctor of Public Health can hold the office of Commissioner of Health, and he must have had five years residence on the island or have had ten years with the Army, Navy or Public Health Service, in addition to his other qualifications.

They have a very rigid set of laws relating to Public Health. Most babies are vaccinated against smallpox at the age of six months and vaccination is compulsory on entering school or kindergarten. Toxin antitoxin is administered at school age. There has been no diphtheria among children for ten or twelve years. The only outbreak occurred in adults and was a mild, milk-borne affair, which was quickly traced to the guilty dairy. The infected cows were slaughtered and the owner allowed no compensation as in every instance he was found to have violated some law relating to the dairy industry. Tuberculosis contacts are all regularly examined. Should one fail to report on time he is immediately in collision with the law and any public assistance as relief is withheld until he reports for examination.

The common cold is frequent and runs about the same course as in Illinois. Sinusitis and middle ear disease are common among the swimmers and that includes most of the younger people.

There is no malaria, at least on the Island of Oahu where Honolulu is located, although the *Anopheles* mosquito is present, as is also the yellow fever carrying *Stegomyia*. At present the health authorities are particularly on the lookout for mosquitoes arriving by plane. We were not

allowed to disembark until after the Public Health officer had inspected the Clipper.

Years ago when plantation labor was imported in large numbers quarantine was a very simple matter. Honolulu was so far from all other ports that the sailing time of vessels exceeded the incubation period of infectious diseases. The Japs built the first fast boats that reduced this time and so could bring in passengers during the incubation period. However, no major epidemics occurred.

Every ton of freight coming into the island pays a tax of 1c toward a fund accumulating to fight possible epidemics. This fund is controlled by the Chamber of Commerce and now amounts to about \$300,000. It has been touched only two or three times. Once it was used to purchase automobiles for the Public Health nurses.

There is no rabies and to guard against its importation all dogs on arrival are quarantined for four months. This costs the owner 35c per day so that any mut becomes a valuable or at least an expensive dog by the time he passes quarantine.

There are but few flies. When boats carrying copra arrive the town fills up with so-called copra flies but apparently they do not carry disease. They disappear within twenty-four hours after the boats leave.

There are no snakes on the island, but many mongooses, whose ancestors were imported years ago.

The medical men are a well-trained, high-grade lot of fellows, and I would advise against any man going over with the idea that he is going to spread a lot of light in darkened corners. Any speaker who visits the island had better be prepared to be on his toes at all times. A great many of the men located in Honolulu come from the Middle West and many of them had their training in Chicago.

Returning, the Clipper left Honolulu at 2:43 P. M., September 20, and arrived in San Francisco at 11:30 A. M., September 21, more than an hour late because of head winds. The United Air Lines plane left at 12:45 P. M. and arrived in Chicago at 5:00 A. M., Friday, September 22. This made about thirty-three hours elapsed time. Passage on the Clipper both to and from Honolulu was very smooth. As a matter of fact, one had to watch the clouds to be sure that he was moving at all. The one disagreeable feature was

the roar of the four motors. The lounge was not particularly well soundproofed, though in the sleeping quarters, which were farther away from the motors, the noise was reduced to the point where it did not prevent a peaceful sleep.

The navigation of these ships is something to command admiration. Leaving San Francisco they head for what is little more than a dot in the Pacific 2440 miles away and week after week they arrive exactly on the spot they are looking for. They are in contact with both San Francisco and Honolulu every few minutes during the entire flight and speak to most ships they meet or pass en route. Before boarding the plane, the crew, and the land officers, decide at what altitude the Clipper will cross, as they know the height at which the most favorable winds will be encountered. Seven different trails or routes are outlined between San Francisco and Honolulu and the one to be used for that flight is selected before the takeoff. The flight is divided into zones and a certain amount of time is allotted for crossing each of these. Finally, a prediction is made as to the amount of time that will be required for the flight. Enough fuel to last several hours longer than this predicted time is put into the tanks. In addition to regular communication with the stations on the island and the mainland, frequent observations are taken the same as by the navigation officers of a ship. Consequently the crew know at all times exactly where they are. The Clippers do not fly at night except between Honolulu and San Francisco.

The Clippers do not fly as fast as the land planes. I doubt whether at any time we exceeded a speed of 140 miles per hour and for several hours on the return trip our speed barely exceeded 100 miles per hour. The land planes regularly cruise at about 180 miles per hour, sometimes exceeding it with a tail wind or being delayed several miles per hour by head winds.

Making the same trip by rail and ship would have required approximately fourteen days. Making it by air, I was gone a total of fifteen days, a little better than thirteen of which were spent in Honolulu.

The Pan Pacific Surgical Conference convened while I was there. This was attended by a number of men from the Middle West: Dr. and Mrs. John A. Wolfer, Dr. and Mrs. Hoeltgen, Dr. and Mrs. David Maher of Chicago, Dr. and Mrs. Corboy of Valparaiso, Indiana, Dr.

Leckrone of Rochester, Indiana, and Dr. and Mrs. Kimler of Garrett, Indiana. Dr. Leckrone went deep sea fishing shortly after his arrival and managed to land a 200 pound yellow fin tuna.

Their hospitality is a thing they delight in and apparently indulge to their heart's content. At any rate, the visitor is so well treated that he is left wide-eyed with astonishment. I can strongly recommend Honolulu as an ideal place for a vacation. While this trip was in no wise a vacation and I would have worked but little harder had I been in my own office, I still saw enough to convince me that it would be an ideal playground. James H. Hutton, M. D.

POST GRADUATE ASSEMBLY IN CHAMPAIGN

Doctors of the Seventh, Eighth and Eleventh Councilor Districts will sponsor a post graduate conference in Champaign, Illinois, on Thursday, December 7.

The meeting will open with a complimentary buffet luncheon at 12:00 o'clock noon.

The course will be conducted in the afternoon and evening, each speaker being limited to twenty-minutes. Papers will be followed by questions from the floor. There will be no scheduled formal discussion.

The program will begin at 1:00 o'clock and will recess at five o'clock for dinner. There will be seven subjects presented in the afternoon, as follows: The Fundamentals in the Use of Sulfanilamide and Its Allied Compounds in Infection; Recent Developments in the Treatment of Diabetes Mellitus; Cardiac Emergency and Their Treatment; The Emergency Treatment of Automobile Injuries; The Treatment of Athlete's Foot and Other Fungus Infections of the Skin; The Treatment of Common Ailments in Children; Physical Therapy.

Dinner will be served at 5:30 and will be followed by four talks on The Management of the Male and Female Climacteric; The Treatment of Head Injuries; Why, When and How to Immunize; The Treatment of Common Disorders of the Upper Respiratory Tract.

Doctors of the state are cordially invited to attend this conference for which there is no registration fee. This is the second in a series of postgraduate conferences given in cooperation with the Illinois State Medical Society.

EDUCATIONAL COMMITTEE

Report for August and September

AID TO COUNTY MEDICAL SOCIETIES:

3,267 notices mimeographed, addressed and sent to doctors announcing scientific programs presented in Perry, Whiteside, Effingham, Randolph, McLean, Bureau, Henry, Lee, LaSalle, Tri-County societies.

525 announcements of programs sent to newspapers giving publicity for LaSalle, Henry, Lee, McLean, Cass, Carroll, Bureau, Tri-County societies and North Shore Branch of the Chicago Medical Society and the Chicago Medical Society.

500 announcements about the Chicago Medical Society first public meeting.

MATERNAL WELFARE PROGRAMS:

150 notices sent for Rock Island County Medical Society announcing Clinical Conference on Maternal Welfare.

45 programs mimeographed for Clinical Conference on Obstetrics sponsored by Perry Memorial Hospital, Princeton.

30 Invitations sent for Clinical Obstetrical Conference at Princeton.

47 invitations sent for Maternal Welfare Program sponsored by Kewanee Physician's Club.

1,000 copies of Maternal Welfare Platform prepared for the State Maternal Welfare Committee and sent to all county Chairmen.

51 newspaper releases concerning Rock Island Clinical Obstetrical Conference.

NEWSPAPERS:

Press articles written and approved on the following topics: Heroes of Medicine in Warring Countries; November Days; Hunters and Rabbit Fever; Blood Transfusions; Saving Ourselves from Colds; Avoid Home Accidents; Mentally Handicapped Children; Time to Save Hearing; Winter Lunches for School Children; Early Colds.

952 articles sent to Illinois libraries.

912 articles sent to Illinois Hospitals.

6,881 articles sent to lay list which includes W.P.A. teachers, Home Advisers, Schools, Red Cross, Health Chairmen, etc.

1,250 booklets announcing services of Educational Committee sent to entire mailing list.

1,142 editorial style health articles sent to newspapers.

767 health columns sent to downstate newspapers.

107 health columns sent to Chicago newspapers.

SCIENTIFIC SERVICE COMMITTEE:

29 scientific programs were arranged for these two months.

2 Heart Clinics held.

The program of the Scientific Service Committee is developing all over the state and many counties have asked the Committee to arrange not one program, but weekly or monthly programs during the coming year. In the experience of the past twelve years, there

have never been so many requests received from county societies. This is most encouraging.

A new, revised list of programs available to county medical societies is now being printed and will be distributed to county secretaries within a short time. The Committee feels that this comprehensive list of subjects and speakers will be invaluable to county society program chairmen.

The Scientific Service Committee in conjunction with the recently appointed special committee on Post Graduate Education has arranged a one day clinical conference which will be held on November 9th at Jacksonville. The program will consist of eight speakers and eight discussants—representing Chicago and downstate. Men attending the conference will be urged to participate in the general discussions. The program will begin at 9:30 in the morning and will continue until 9:30 in the evening.

This is the first of three or four such conferences which will be arranged for different sections of the state.

41 Scientific speakers have been scheduled for the month of October.

The Committee has asked county secretaries to send in schedules of meetings so that a column giving a list of coming meetings and speakers may be published monthly in the JOURNAL. The first such list appeared in the October JOURNAL. This should enable doctors of adjoining counties to know of special programs in which they may be interested.

SPEAKERS BUREAU:

20 doctors presented popular health talks to lay groups.

Conferences were held with the Chairmen of Public Health and Child Hygiene of the Illinois Federation of Women's Clubs and the Illinois Congress of Parents and Teachers.

A health institute was planned for one of the largest districts of the Federation. Six speakers from the Speakers Bureau of the Educational Committee will present the program.

Speakers were scheduled to address Farm Institutes and County Teachers Institutes.

MISCELLANEOUS:

The Committee has changed exhibits in the Marshall Field & Company Annex window every month. This is the third year that the Committee has presented these popular health displays. The manager of the building has commented most favorably on the exhibits, the subjects presented, and the interest aroused in people going through the lobby.

The Committee prepared an exhibit for the Illinois State Nurses Association meeting in Peoria.

The Committee assisted the Southern Illinois Medical Society in securing speakers for its meeting in Mount Vernon.

Help has been given to the Maternal Welfare Committee and every effort made to secure speakers, give publicity, secure slides, etc.

175 new package libraries on popular health subjects have been prepared for the use of Illinois physicians.

RADIO:

For the 13th consecutive year, the Educational Committee has been asked to give weekly health programs over station WGN. These begin Tuesday, October 24th at 2:45 P. M.

On November 2nd the Committee will begin a new series of programs on Tuesdays and Thursdays from 1:00 to 1:15 over station WHIP.

Beginning the first of November, the Committee will be responsible for SIX RADIO PROGRAMS A WEEK over stations

WJJD
WGN
WAAF
WGES
WHIP

A total of 90 minutes a week is being given to the Illinois State Medical Society by Chicago radio stations.

Some doctors question the good that these broadcasts do! It would seem that if WGN and these other stations are willing to give valuable time each week, year after year, to the Society for these health programs, they must feel that they are of value to the radio public.

During August and September a total of 27 programs were given.

The Committee is furnishing copies of its programs to a number of downstate counties for use over local stations by local doctors.

ILLINOIS EYE AND EAR INFIRMARY OFFERS COURSE IN OPHTHALMOLOGY

There are some twenty counties in the State of Illinois that are lacking the services of an Eye, Ear, Nose, or Throat physician. For their ophthalmic service, the inhabitants of those counties have to depend upon non-medical refractionists or upon their own general physicians who may, but probably have not had any special training in diseases of the eye or refraction. Ophthalmology is a highly specialized subject and today the consensus of opinion is that a minimum of two years training is required for the practice of that specialty. But with the background of his general medical training, a general practitioner can learn sufficient ophthalmology to care for the simpler conditions that may arise in the daily run of his practice. Such specialized training must needs be concentrated and simple. The physician must learn to recognize ordinary diseases of the eye and what may be done. Even more must he learn to recognize conditions that are beyond the possibilities of his care. In addition he must learn to care for the simple refractive needs of his patients.

There are but few places in this country where a man in general practice can obtain such ophthalmic training, quickly and inexpensively. Therefore it is most interesting to note the plan of the Illinois Eye

and Ear Infirmary to provide short courses. It is even more interesting to find that those courses are limited to men doing general practice in the State of Illinois. And most interesting of all is the plan to limit the registrations to such general practitioners as are not within easy distance (25 miles) of established ophthalmologists in the State. Such a scheme of registration is perfectly logical for the proposed courses are not intended to train ophthalmologists, but to aid men in general practice where there are no available ophthalmologists, in the better care of the eyes of the people of Illinois.

MATERNAL WELFARE COMMITTEE

The regular quarterly meeting of the Maternal Welfare Committee was held at the Palmer House, Chicago, October 8, 1939. A new program was approved by all the members and copies will shortly be in the hands of all the local county chairmen and secretaries of county societies.

Illinois has now become one of the leaders in the movement to minimize maternal and early infant deaths. Several states who have not had a program are modeling theirs after the plan adopted by the State Committee.

The new program as adopted:

1. More emphasis should be placed on adequate prenatal care.
 - a. Monthly visits up to the seventh month, then every two weeks—history—physical examination including pelvic measurements—urinalysis—blood pressure—Kahn—blood count including red, white and hemoglobin—weight and dietary instructions.
2. We recommend that each County Medical Society should appoint a Maternal and Child Welfare Committee whose duties should consist of:
 - a. Investigate maternal, fetal and early infant deaths for constructive study in reducing mortality.
 - b. Organize a speakers bureau for lay groups within the county and foster lay group education under medical supervision.
 - c. To increase the number of programs on maternal welfare and pediatric subjects before local society and hospital groups.
 - d. Encourage the educational program among nurses of the community by such means as moving pictures and special lectures.
 - e. Encourage any improvement of local hospital facilities for better maternal care.
3. We suggest that the Chairman of the Maternal Welfare Committee be designated as the County Chairman and be responsible for the furthering of this program in his respective county.

Because of the importance of the efforts of the local County Chairman and to further explain the program, an invitation will shortly be issued to all members of the State organization to attend a luncheon in Springfield. It is hoped that in this manner enthusiasm will be developed and the men may then return to their

respective county societies and explain the aims of the State Medical Society and reasons for fostering this program, the first attempted by organized medicine in the state of Illinois.

The Ladies' Auxiliary of the State and County Societies will be presented with a copy of the program and with their assistance and cooperation the local Maternal Welfare Committees undoubtedly will receive valuable aid if they see fit to adopt the platform and make it a major issue.

T. B. Williamson, M. D., Chairman.
John F. Carey, M. D., Secretary.

WOMAN'S AUXILIARY ACTIVITIES

Briefs for 1939-1940.

Know Your Auxiliary.

Constitutions and By-Laws.

Purposes and Aims.

The State Program Committee under the able leadership of Mrs. C. Otis Smith have outlined a most instructive and entertaining program for the year. They also suggest the additional features of devoting ten minutes of each meeting to a review of the current magazine "Hygeia," and fifteen minutes to the study of subjects which are of mutual interest, to be followed by group discussions.

We can not stress too strongly the interest and support the Auxiliary members should give to Radio Broadcasts sponsored by the Medical Society. Time was when such talks were highly scientific, dry, and boresome but not so any more. The Committee responsible for these broadcasts have developed a technique of presenting the subjects in a most interesting manner and they now have at their disposal, doctors with much speaking talent. Invite your friends to listen also.

COUNTY NEWS

Sangamon County had an Acquaintance Day Luncheon, Sept. 11th, at Fisher's Inn with 25 members present. They also had a regular meeting on Sept. 25th at the home of Mrs. W. Morginson. Mrs. D. M. Sirca, president, discussed the objectives of the auxiliary. Report of National Convention, by Mrs. H. Otten, Review of Sept. issue of "Hygeia," Mrs. D. J. Lewis. Introduction of Round Table, Mrs. H. Otten, assisted by Mrs. O. Ehrhardt, who gave the pros and cons of "Socialized Medicine," and by Mrs. C. Mayes, who discussed "Compulsory and Voluntary Health Insurance."

Coles-Cumberland County, Mrs. L. A. Neal, Pres. Regular meeting Sept. 20th, at the Hotel U. S. Grant. Mrs. W. R. Rhodes of Toledo spoke on "The National and State Public Health Service."

Bureau County held their meeting Sept. 12th. Dinner at the hospital, business meeting at the home of Mrs. M. A. Nix, Mrs. M. E. Miltenberger, Pres., presiding.

Vernilion County. A po-luck dinner was enjoyed at the home of Mrs. A. R. Brandenberger on Sept. 5th. After the business session the president, Mrs. J. H. Wil-

liamson, introduced the guest speakers of the evening, Dr. Holland Williamson and Miss Henrietta Perlman, who spoke on "Maternity Mortality Rate."

Aux Plaines Branch to the Chicago Medical Society; Mrs. C. W. Stuart, Press and Publicity Chairman. Held their annual Bridge Luncheon at the Oak Park Country Club Sept. 22nd. Mrs. H. M. Leaf, President.

ILLINOIS PHYSICIANS ATTEND POST-GRADUATE COURSES IN OBSTETRICS AND PEDIATRICS

For the past three years the University of Illinois in cooperation with the State Department of Public Health has invited members of the faculties of Northwestern University, the University of Chicago, Rush Medical College, Loyola University, and the Cook County Postgraduate School to participate in giving short concentrated courses in obstetrics and pediatrics. These have been in the nature of a combination of lectures, dispensary work with patients, ward rounds, roundtable discussions, consultation hours, and many special demonstrations in the pediatric and obstetrical departments at the Research Hospital, and ward walks at Cook County Hospital. An effort was made to keep the work as informal as possible.

The courses were repeated eight times during July and August of 1937, again for eight periods in 1938, and four periods in 1939. Registration by out-of-Chicago doctors has been given priority during the three years, and this year only downstate physicians were accepted. To date 201 physicians have taken advantage of the opportunity offered. One hundred and thirty-three were residents outside of Chicago. Several physicians have repeated the courses two and even three times.

Following is a list of physicians attending the courses from each county:

Brown County	Dr. P. A. Gannon, Pontiac
Dr. Sarah S. Webster, Mt. Sterling	Logan County
Bureau County	Dr. W. W. Coleman, Lincoln
Dr. Philip V. Hall, Princeton	Dr. E. H. Cox, Mt. Pulaski
Champaign County	Dr. LeRoy Branon, Lincoln
Dr. H. N. Greaves, Champaign	Dr. R. L. Ijams, Atlanta
Dr. D. V. Sutch, Champaign	Macon County
Dr. Willard L. Veirs, Urbana	Dr. A. L. Ennis, Maroa
Clark County	Dr. W. D. Murfin, Decatur
Dr. H. C. Houser, Westfield	Dr. V. R. Wilson, Decatur
Cook County*	Dr. Lee O. Frech, Decatur
Dr. H. D. Meisenheimer, Arlington Heights	Macoupin County
Dr. Ben E. Wagner, Riverside	Dr. E. R. Hobson, Gillespie
*Chicago not listed	Madison County
Crawford County	Dr. R. L. Holcombe, Marine
Dr. L. R. Illyes, Palestine	Dr. E. Wilson, Troy
Dr. J. A. Ikemire, Palestine	Dr. W. J. Reuter, Bethalto
Dr. L. B. Highsmith, Flat Rock	Dr. E. A. Rygh, Highland
Dr. R. J. Taylor, Palestine	Mason County
Dr. Marjorie Ikemire, Palestine	Dr. I. E. Dolph, Manito
Cumberland County	Dr. W. H. Schuette, Mason City
Dr. N. J. Houghton, Greenup	Massac County
Douglas County	Dr. Garrett, Brookport
Dr. J. H. Taylor, Villa Grove	McHenry County
	Dr. U. L. Sealey, Harvard
	McLean County
	Dr. J. Jensen, Saybrook

DuPage County

Dr. K. L. Fish, Roselle
Dr. F. D. Leahy, Elmhurst
Dr. Mathis, Elmhurst
Dr. A. B. Jones, Wheaton

Edgar County

Dr. C. P. Whalen, Hume
Effingham County

Dr. R. D. Martin, Dietrich
Fayette County

Dr. Glen Walker, Farina
Ford County

Dr. A. A. Absher, Sibley
Fulton County

Dr. E. E. Davis, Avon
Dr. F. D. Jacobs, Farmington

Gallatin County

Dr. E. W. Burroughs, Ridgeway

Greene County

Dr. W. H. Garrison, White Hall

Dr. A. K. Baldwin, Carrollton

Grundy County

Dr. J. B. Larsen, Morris

Hancock County

Dr. E. L. Kingsbury, Nauvoo

Hardin County

Dr. Watson, Elizabethtown

Henry County

Dr. A. W. Wellstein, Geneseo
Jackson County

Dr. Andrew Esposito, Murphysboro

Dr. J. A. Weatherly, Murphysboro

Jasper County

Dr. R. S. Wishard, Wheeler

Jersey County

Dr. A. B. Goltz, Fraaton

Kane County

Dr. E. J. Rossman, Aurora

Dr. S. Klein, Aurora

Dr. F. N. Maginnis, Aurora

Dr. I. G. Murphy, Aurora

Dr. Elwyn S. Shonyo, Elgin

Kankakee County

Dr. L. J. Wisner, Herscher

Dr. H. A. Hartman, Kankakee

Dr. R. V. Thomas, Manteno

Dr. S. W. Blagan, Aroma Park

Kendall County

Dr. A. E. Ritt, Yorkville

Knox County

Dr. W. W. Keene, Yates City

Dr. L. N. Tate, Galesburg

Dr. C. A. Ross, Galesburg

Lake County

Dr. J. A. Ross, Wauconda

Dr. C. J. Foley, Waukegan

Dr. Marion Cole-Schroeder, Barrington

Dr. Robert R. Jacks, Highland

La Salle County

Dr. J. L. Rock, Oglesby

Dr. F. J. Maciejewski, La Salle

Dr. M. J. Rosenthal, La Salle

Lawrence County

Dr. R. F. Snider, St. Francisville

Dr. C. G. Stoll, Sumner

Lee County

Dr. L. M. Johnson, Arrow-smith

Menard County

Dr. T. V. Plews, Petersburg

Morgan County

Dr. F. A. Quenser, Jacksonville

Dr. Milton Glascoe, Jacksonville

Moultrie County

Dr. S. H. Ambrose, Lovington

Peoria County

Dr. O. C. Ives, Peoria

Dr. J. W. Dougherty, Chillicothe

Dr. Fred C. Endres, Peoria

Dr. S. L. Stevens, Dalton City

Perry County

Dr. J. W. Stevens, DuQuoin

Pulaski County

Dr. O. Caraker, Olmsted

Dr. Wallace, Mounds

Randolph County

Dr. I. D. Newmark, Chester

Dr. W. W. Fullerton, Steelville

Rock Island County

Dr. H. H. Parsons, Moline

Dr. Leo Gamburg, Moline

Dr. J. H. Fowler, East Moline

Dr. A. D. West, Moline

St. Clair County

Dr. R. F. Culbertson, East St. Louis

Dr. H. D. Smith, East St. Louis

Dr. O. G. Schneidewind, New Athens

Saline County

Dr. J. J. Klein, Harrisburg

Sangamon County

Dr. R. S. Campbell, Springfield

Dr. O. E. Ehrhardt, Springfield

Dr. J. H. Hill, Mechanicsburg

Dr. Ruth Raattama, Springfield

Dr. Elizabeth B. Ball, Springfield

Dr. F. Bornstein, Rochester

Stark County

Dr. J. T. Wead, Wyoming

Vermilion County

Dr. V. L. Murphy, Georgetown

Whiteside County

Dr. R. H. Lester, Morrison

Dr. W. R. Mechtenberg, Morrison

White County

Dr. E. C. Giltner, Maunle

Will County

Dr. J. R. Finkle, Plainfield

Dr. J. W. Turner, Peotone

Dr. Carl J. Gustafson, Monee

Dr. Lena Stewart, Joliet

Williamson County

Dr. L. H. Green, Johnston City

Winnebago County

Dr. A. M. Swanson, Rockford

Dr. C. E. Klontz, Cherry Valley

Dr. C. E. Hanstron, Rockford

Dr. W. B. Fonvielle, Rockford

Dr. S. J. Wojcik, Paw Paw

Livingston County

Dr. G. T. Grout, Flanagan

Dr. E. F. Joss, Dwight

Physicians desiring to reserve places for the 1940 session may do so now. Applications are considered in the order that they are received.

SYMPOSIUM ON NUTRITIONAL DEFICIENCY

Thorne Hall, Northwestern University Medical School

November 15, 1939

9:00 a. m. to 12:00 p. m.

Chairman—Dr. N. S. Davis, III.

1. Vitamin A Deficiency—Dr. Frederick T. Jung.

2. Vitamin D and Calcium Deficiency—Dr. Smith Freeman.

3. Vitamin K Deficiency—Dr. Warren H. Cole.

4. Vitamin C Deficiency—Dr. Chester J. Farmer and Dr. Arthur F. Abt.

5. Pellagra and Polyneuritis in Alcohol Addicts—Dr. Don C. Sutton and Dr. John Ashworth.

6. Round Table Discussion—Dr. Tom D. Spies.

Luncheon—DeWitt Hotel, \$0.50.

2:00 p.m. to 5:00 p.m.

Chairman—Dr. Chester J. Farmer.

1. Nutritional Deficiencies During Maturity and Old Age—Dr. N. S. Davis, III.

2. Nutritional Deficiencies During Pregnancy—Dr. Edward Allen.

3. Nutritional Deficiencies During Infancy and Childhood—Dr. Bengt Hamilton.

4. Anemia Due to Nutritional Deficiency—Dr. Howard L. Abt.

5. Nutritional Deficiencies and Their Relation to Surgery—Dr. Charles B. Puestow.

6. Normal Dietary Requirement—Dr. Clifford J. Barborka.

7. Commercial Vitamin Preparations—Dr. F. C. Bing.

6:30 P.M. Dinner—Chicago Women's Club, 72 E. 11th St., \$1.50.

8:30 P.M. Vitamin B and Pellagra—Dr. Tom D. Spies, Cincinnati, Ohio.

AMERICAN BOARD OF OPHTHALMOLOGY

WRITTEN EXAMINATION, March 2, 1940, in various cities throughout the country. THIS WILL BE THE ONLY WRITTEN EXAMINATION IN 1940.

All applications for this examination must be received before January 1, 1940. All applicants must pass satisfactory written examination before being admitted to oral examination.

ORAL EXAMINATION: New York City, June 8 and 10. Fall examination to be announced later.

CASE REPORTS: Candidates planning to take June examination must file case reports before March 1.

For application blanks write *AT ONCE* to Dr. John Green, 6830 Waterman Ave., St. Louis, Mo.

SECOND ANNUAL "PAY-YOUR-DOCTOR WEEK"

"Pay-Your-Doctor Week," inaugurated last year by California Bank in Los Angeles on a purely local basis struck a responsive chord in other sections of the country with the result that the week of November 26 to December 2 of this year has been designated as national "Pay-Your-Doctor Week" with banks in all sections of the country sponsoring the movement.

The November issue of *Banking*, official journal of the American Bankers Association, carries an article outlining the idea and suggesting that one bank in each city in the country sponsor and publicize "Pay-Your-Doctor Week."

The article written by Rod Maclean, manager of the advertising and publicity department of California Bank, suggests newspaper advertisements, radio, outdoor advertising, street car cards and bank statement stuffers as means of publicizing the occasion. In addition, Mr. Maclean suggests that every one engaged in the profession of healing be notified in advance of the date and that a supply of reprints of the newspaper ads be made available for statement enclosures.

A year ago, California Bank recognized the fairly widespread tendency on the part of the public to regard doctor bills as obligations that can wait indefinitely or at least until after all other bills have been paid and inaugurated "Pay-Your-Doctor Week" in Los Angeles. Because the movement originated entirely outside of the profession the question of ethics was not involved and the idea found instant favor with the Los Angeles medical fraternity.

The success of the movement was thereafter publicized in several national banking and medical periodicals and California Bank became the recipient of a stream of inquiries from interested banks in all sections of the country. When it became apparent that 1939 "Pay-Your-Doctor Week" would be observed in a number of cities scattered throughout the country, the machinery for making it a national movement was set up by California Bank.

While the movement is not entirely altruistic on the part of sponsoring banks in that they offer to lend funds for the excellent purpose of paying bills, it does call attention in a striking manner to the plight of many a doctor who is on call twenty-four hours a day, but who is generally paid at the patient's convenience.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The written examination and review of case histories (Part I) for Group B candidates will be held in the various cities of the United States and Canada on Saturday, January 6, 1940, at 2 p. m. Formal notice of the place of examination will be sent each candidate several weeks in advance of the examination date. No candidate will be admitted to examination whose examination fee has not been paid at the Secretary's Office. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held in June, 1940. Receipt of Group B

applications for the current examination (January 6, 1940) closed October 4, 1939.

Candidates for *reexamination* in Part I (written paper and submission of case histories) must request such reexamination by writing the Secretary's Office not later than November 15, 1939. Candidates who are required to take reexaminations must do so before the expiration of three years from the date of their original examination.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 8, 9, 10 and 11, 1940, immediately prior to the annual meeting of the American Medical Association in New York City.

Application for admission to Group A, Part II examinations must be on file in the Secretary's Office not later than March 15, 1940.

After January 1, 1942, there will be only one classification of candidates, and all will be required to take the Part I and Part II examinations.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

UNITED STATES CIVIL SERVICE EXAMINATION

Junior graduate nurse, \$1,620 a year.

U. S. Public Health Service, Federal Security Agency, and Veterans Administration.

Applications must be filed with the United States Civil Service Commission at Washington, D. C.

Because of the demand for qualified eligibles, applications will be accepted continuously until further notice.

Persons whose applications are accepted will be notified when to appear for the assembled written examination, which will be given at approximately 3-month intervals.

A second application will not be accepted from any applicant within 3 months of the filing of the first application, nor from any applicant who has already attained eligibility in this examination.

The United States Civil Service Commission announces an open competitive examination for the position named above, to be held at any of the places listed hereon. Vacancies in this position in the field, and in positions requiring similar qualifications, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The salary named above is subject to a deduction of 3½ percent toward a retirement annuity, and, in addition, the Veterans' Administration makes a deduction from the above-named salary not to exceed \$480 a year for quarters and subsistence, and the United States Public Health Service a deduction of \$690 a year, for quarters, subsistence, and laundry, when furnished.

Employment lists.—Permanent employees in the classified service will, upon earning a passing mark in this examination, have their names placed upon a separate list of eligible Government employees, which list may

be certified separately to fill appropriate vacancies in accordance with the civil service rules.

Duties.—Under immediate nursing supervision, to perform general nursing duty in the wards of hospitals, infirmaries, or sanatoria; and to perform related duties as assigned.

Basis of ratings.—Competitors will be rated on practical questions on a scale of 100.

Time required.—About 3½ hours will be required for this examination.

Statement concerning qualifications will be verified by the Commission; exaggeration or misstatement will be cause for disqualification.

Applications forms.—The necessary forms may be obtained from the Secretary, Board of United States Civil Service Examiners, at any first-class post office (including the places listed hereon), from the United States Civil Service Commission, Washington, D. C., or from the United States Civil Service district office at any of the cities given below (the title of the examination desired should be stated):

Atlanta, Ga., New Post Office Building.
Boston, Mass., Post Office and Courthouse Building.
Chicago, Ill., New Post Office Building.
Cincinnati, Ohio, U. S. Post Office and Courthouse.
Denver, Colo., Post Office Building.
New Orleans, La., Customhouse.
New York, N. Y., Federal Building, Christopher St.
Philadelphia, Pa., Tenth Floor, Gimbel Building.
Seattle, Wash., Federal Office Building.
St. Louis, Mo., New Federal Building.
St. Paul, Minn., U. S. Post Office and Customhouse.
San Francisco, Calif., Federal Office Building.
Honolulu, T. H., Federal Building.
Balboa Heights, Canal Zone, Secretary, Board of United States Civil Service Examiners.
San Juan, P. R., Chairman, Puerto Rican Civil Service Commission.

The exact title of the examination, as given at the head of this announcement, should be stated in the application form.

Issued October 9, 1939.

RECTAL AREA CANCERS MAY BE SECONDARY

All malignant growths of the rectal area should be minutely examined to ascertain whether they are secondary or primary cancers, inasmuch as such conditions may have their origin in other parts of the body, Harry E. Bacon, M. D., Philadelphia, advises in *The Journal of the American Medical Association*.

Reporting seventeen cases of cancer of the breast or of organs in the abdominal cavity in which the first symptoms were those caused by malignant growths of the rectal area, Doctor Bacon points out that: 'whereas in this series the disease was advanced, it must be realized that such secondary invasion may occur early and be the only extension. The condition is of importance in that it is not extremely rare, the symptoms may not direct attention to the primary growth and the extrarectal process may be incorrectly diagnosed. As a routine procedure careful palpation and

visualization of the rectum in every case of suspected malignant growth are advocated.'

SYNTHETIC HORMONE IS MADE AVAILABLE

St. Louis.—The new synthetic adrenol cortex hormone, life-saving remedy for Addison's disease, made by the Swiss chemist, Dr. T. Reichstein, was to be available commercially the first of June, Dr. George W. Thorn of Johns Hopkins Hospital announced here. Tests of this synthetic hormone on animals and patients which show that the synthetic chemical can substitute successfully for the chemical made by the patient's own gland have been made by Dr. Thorn and Drs. R. Palmer Howard, Kendall Emerson, Jr., and Warfield M. Firor of the Johns Hopkins Hospital and Medical School.

The Hopkins doctors have been giving the synthetic hormone in oil preparations by hypodermic injection and also have given it by burying pills of the hormone crystals under the patient's skin. By this latter method the patient can be given an eight-months' supply of hormone at one operation, instead of having to have daily injections.

Fifteen very sick patients who were given the new product are now well enough to be back at work. Before giving the patient his long-term supply of the hormone in the pills, the amount he will need must first be calculated, Dr. Thorn said, by giving the oil preparation by injections. Even after he is carrying the pills around in his body, he must be watched because if he gets any germ ailment, he will need more hormone which must be given by injection.

WHAT ABOUT COMPULSORY HEALTH INSURANCE?

Do you want it? Do physicians want it? Who are the proponents, and what do they expect to gain? The medical profession is opposed to it for the following reasons:

1. You can not choose your own physician.
2. You will lose the intimate relationship between yourself, your family, and your family physician.
3. It will reduce the present high character of medical service.
4. It will not supply preventive medicine.
5. It will cause a sharp rise in your tax rate.
6. It will not reduce the cost of medical care.
7. It will not improve the quality of medical care.
8. It will not reduce mortality, or prolong life.
9. It will not favorably effect the occurrence of disease.
10. It will not take care of the pauper population.
11. It will not provide greater economic security to those needing it.
12. It will not be a good thing for society.
13. It has never produced the promised, or expected results in any country in which it has been adopted.

—*Weekly Roster Medical Digest.*

Original Articles

DIAGNOSIS IN THE ACUTE PNEUMONIAS

COURTNEY N. HAMLIN, M. D.
ROCKFORD, ILLINOIS

In the present day management of the acute pneumonias it is now generally recognized that early and accurate diagnosis is extremely important. Prognosis in the individual case is improved when specific therapy can be applied early. In order to make early diagnosis the physician must have the disease in mind, and must be able to elicit, and properly interpret early findings.

Since 1928 Cole, Reimann,¹ and other prominent workers in pneumonia have been discussing this disease in terms of typical and atypical pneumonia. The typical pneumonia is one characterized by sudden onset with chills, fever, cough, pain in the side and the expectoration of rusty sputum. There is observed on examination, cyanosis, rapid shallow breathing, dullness over a portion of the lung fields and rales. This is of course the classic lobar pneumonia. The term atypical pneumonia is used for all forms of pneumonia which differ clinically from lobar pneumonia. This is a simple, practical and descriptive classification for the clinician. When seeing a case early the physician doesn't know whether or not the area of pneumonia found by physical examination and x-ray will remain a bronchopneumonia or will develop into a lobar pneumonia. Furthermore, he hopes to isolate the exact bacteriological cause and, with our now very effective therapy for pneumonia, arrest the disease before the usual pneumonic consolidation has occurred. Thus in handling early cases the clinician is more apt to disregard the terms lobar and bronchopneumonia, and think rather in terms of typical and atypical pneumonia, qualifying these terms further by an exact bacteriological diagnosis.

The classic lobar or typical pneumonia usually offers no difficulty as far as clinical diagnosis is concerned. The atypical pneumonias on the other hand may present numerous diagnostic problems. The diagnosis here is often obscured because of its gradual onset during the course of an upper respiratory infection. Again the onset

may be sudden and exaggerated, with symptoms such as meningismus and delirium predominating. The pneumonia may develop gradually during the course of a chronic illness such as congestive heart failure, undulant fever, delirium tremens, pernicious anaemia and others. In these cases the original disease often masks the onset of a pneumonia. Cecil² found at Bellevue Hospital that 32.6% of his cases of pneumonia occurred in this manner. Finally, pneumonia may have a silent onset without symptoms pointing to the lungs. It must be remembered that pneumonia in elderly and debilitated people may be almost afebrile. McCann³ notes that the chill which is emphasized in text books is present in about two-thirds of the cases, missing in the rest. Pneumonia may develop without pain in the chest, without cough or without expectoration. In these cases rapid respiration, and particularly when combined with cyanosis, is an important clue to diagnosis. The normal ratio of pulse rate to respiration is about 4:1. When this ratio is changed to 3:1 or 2:1 the physician should strongly suspect pneumonia. This is one of the most constant initial signs. Dilatation of the alae nasae, the expiratory grunt in association with rapid shallow breathing, and a coughing of rusty sputum are important early findings.

Signs of consolidation are almost never present at the onset and may not be present in characteristic form for twenty-four or forty-eight hours. This is particularly true when the physician is dealing with a so-called central pneumonia, that is, one in which the consolidation begins around the hilus region and gradually spreads peripherally.

On physical examination the earliest sign of consolidation may be suppression of breath sounds over a portion of a lung field. The next finding may be fine crepitant rales heard best at the end of inspiration, presumably when the alveolar walls held together by sticky exudate, are pulled apart. There may be limitation of respiratory excursion on the involved side, with a compensatory increased motion on the sound side. Variations in expansion can often be detected better by palpation than by inspection. As consolidation progresses rales are heard close to the ear, becoming coarse in character. They may disappear, while the breath sounds become bronchial in character. As consolidation progresses further, whispered and spoken voice sounds are transmitted

Read before Section on Medicine, Illinois State Medical Society, Rockford, May 3, 1939.

easily and with increased volume. Pleural friction rubs may be heard.

Upper lobe pneumonias in adults sometimes present diagnostic problems. In an analysis of 180 pneumonia cases Rosenblatt⁴ found primary upper lobe pneumonia occurring in 14% of the cases. McCordick and Warr in another series found an incidence of 26 and 10% respectively. These cases may be diagnostic problems for several reasons. First, they are often confused with pulmonary tuberculosis. Secondly, there is a tendency for the onset of symptoms to be characterized by delirium and meningismus which favors a diagnosis of meningitis. Thirdly, these patients often present no chest findings of pneumonia on physical examination. In five of his twenty-four cases, Rosenblatt found that the symptoms were typical of pneumonia but there were no chest signs. Diagnosis would have been missed had it not been for routine roentgen findings.

Roentgen films in cases of typical pneumonia usually contribute very little to the diagnosis. In cases of atypical pneumonia, or in those instances where the physician suspects the disease but cannot confirm it by physical examination, the roentgen film of the chest is most useful. Since this phase of diagnosis is to be discussed in another paper I shall not elaborate further.

Blood counts, although of no specific value in diagnosis, do have some general value. The leukocytes are almost constantly increased. The average count is about 25,000 per cubic millimeter. It is generally true that an increasing number of leukocytes or a high white blood count are of good prognostic import. A diminishing or low white blood count indicates either a very mild infection or lowered resistance on the part of the patient. The differential blood count will show a relative increase in filamented and non-filamented leukocytes during the height of an acute pneumonic infection. As the infection subsides, the number of non-filamented forms decrease and the monocytes increase. With recovery, the filamented leukocytes decrease as do the monocytes.

For a number of years it has been recognized that the acute pneumonias could be caused by a variety of micro-organisms. Most of these pneumonias are caused by the pneumococcus. Bullowa⁵ in 1937 found the pneumococcus to be the offender in about 85% of his cases. More re-

cently Cecil⁶ in an analysis of 560 private pneumonia cases found that the pneumococcus was the cause of the disease in 94.8% of his cases. The next most common organisms causing the pneumonias were, in relative order of frequency, the streptococcus hemolyticus, streptococcus viridans, bacillus influenza, staphylococcus aureus, staphylococcus albus and Freilander bacillus. It must be remembered that the tubercle bacillus is capable of producing an acute pneumonia which at the onset may be indistinguishable clinically from the other varieties.

Previous to 1929, Dochez and Avery had separated the pneumococci into four types. Between 1929 and 1932, Georgia Cooper identified thirty-two different types of pneumococci. This bacteriological study has had a revolutionary effect on the diagnosis and treatment of pneumonia. Today, bacteriological study is as important to the physician handling a case of pneumonia as biopsy is to the physician in the management of malignancy.

In order to arrive at an exact bacteriological diagnosis a number of procedures are usually employed. The first step should be to obtain some sputum from the pneumonia patient. Needless to say this should be material that has been coughed up from the bronchi. In the event the patient is unable to raise sputum two other procedures may be used. A sterile cotton swab may be applied to the posterior pharynx, and this swab is then incubated in a special media known as Avery's broth for about four to six hours. At the end of this time pneumococci may be found in the broth and typing can be done with these recently grown organisms. Another procedure is to do a lung puncture. A sterile syringe with a long needle is used. An area of skin between two ribs and over the consolidated lung lobe is chosen and infiltrated with novocaine. A quick jab is made into the consolidated lung with a long needle, at the same time applying suction on the syringe. By this means some so-called lung juice may be obtained for bacteriological study. Up to 1938 Bullowa⁷ had used this method on 2,500 patients at the Harlem Hospital in New York City. The risk of such a procedure is very slight.

When proper sputum is present the bacteriological study is much easier. The first step should be to smear some sputum on two glass slides. One slide should be stained by the Zeil Neilsen method for tubercle bacilli and the other

should have Gram's stain. The Gram stain should show whether or not any pneumococci are present and may indicate in a general way, the predominating type of organism whether it be the pneumococcus, streptococcus, staphylococcus, or others. The sputum should then be typed by the Neufeld method. This is done by placing a small drop of sputum on a clean glass slide. A drop of rabbit testing serum in mixed with the sputum and a small drop of methylene blue may be added for stain. If the pneumococci are of the type corresponding to the rabbit testing serum used the capsule of the pneumococcus will become markedly swollen. If the pneumococci are of a different type no swelling of the capsule will occur. In order to facilitate typing through all of the thirty-two pneumococcic types the diagnostic rabbit serums have been grouped as shown on the following slide. The laboratory worker first tests by these individual groups. If a positive Neufeld test is obtained for one of the groups then each individual member of that group is used in typing the organism. If very few pneumococci are found in the original stained sputum smear a portion of the sputum specimen may be emulsified with saline and centrifuged. Bacteria collect in the supernatant fluid and this method may provide more organisms for study. This method has recently been described by Taplin⁸ in the journal of the American Medical Association.

It is usually best to check sputum typing by other bacteriological methods. A sputum culture can be done very easily by plating a small amount of it on blood agar. There should be good growth in 24 hours. This is of particular value in demonstrating the predominating organism. Pneumococci grown on blood agar can also be typed by the Neufeld method. Oftentimes for further check a small amount of sputum is injected intraperitoneally into a mouse. The peritoneal cavity of a mouse is a selective culture medium for pneumococci. These organisms will grow there to the exclusion of others. In twenty-four hours pneumococci, if present, may be typed from the peritoneal exudate.

Blood cultures are extremely valuable aids to diagnosis at times. This is true for several reasons. First, a positive blood culture may confirm or disapprove the original sputum typing. If the blood culture differs from the original sputum type found, the organism in the blood

culture should be considered the one most likely the cause of the pneumonia. It must be remembered, however, that more than one type of pneumococcus may be causing the pneumonia. McCann⁹ in a recent publication calls attention to this fact. He points out that with the invasion of a new lobe, one lobe already being consolidated, the temperature may suddenly drop and the patient may show all signs of shock. The temperature again rises in a short time. With this evidence of the invasion of a new lung lobe the sputum should be retyped. Autopsy has revealed different types of pneumococci causing pneumonia in adjacent lung lobes. The blood culture also has considerable prognostic value. Any carefully controlled series will show more deaths among those patients with positive blood cultures than among those with negative ones. Cecil¹⁰ in analyzing 287 cases of pneumococcic pneumonias found a mortality of 74% among those having positive cultures as contrasted with the mortality of only 16% among those with negative blood cultures. Individuals developing bacteremia seem more prone to develop complications. In a series of 1,125 Type 1 pneumococcic cases, Finland¹¹ found 21 cases of empyema. Seventeen of these cases had positive blood cultures.

Bacteriological studies on pneumonia cases has revealed a number of peculiarities as regards the different organisms. Types 1, 3, 2, 8, 5, 7, in that order, are the most common pneumococcic types found in most communities. In the city of Rockford there have been about 175 sputum typings done since December 1st, 1938. The most prevalent types in this small series were found to be in relative order of frequency: Types 3, 1, 2, 7, 16, 4, 6, 19 and 8.

Types 1 and 2 pneumococci are almost never found in the respiratory tract of normal individuals. Some of the higher types may normally be present. Gundel¹² found pneumococci types 18, 6, 3 and 4 predominating in the throats of 1,500 healthy individuals. Cecil,¹³ in his 560 private pneumonia patients, found that pneumococcic types 1, 2 and 3 almost always produced typical pneumonia with classic history, frank physical signs and rusty sputum. Type 3 pneumococcic pneumonias are notoriously severe and usually carry the greatest mortality regardless of treatment. Since this organism is frequently found in so-called normal throats and

since it possesses the characteristics of being readily invasive of the blood stream, Type 3 pneumonias are prone to occur in people debilitated by other disease. Thus, a large part of the problem as regards Type 3 may be due to the fact that this pneumococcus gains a foothold just when the patient's resistance is at its lowest ebb. Cecil also found that higher pneumococcic types were prone to produce atypical pneumonia cases. He further found that streptococcic pneumonias and staphylococcic pneumonias were seriously ill but with indefinite chest findings. Bulowa,¹⁴ in a seven-year study of all the pneumonias at the Harlem Hospital found Types 2, 3, 14 and 19 pneumococci to be the most liable to produce bacteremia. These four types consequently produced the greatest mortality.

In a number of instances pneumonia will be encountered where bacteriological study of the lung secretion fails to reveal any organism thought to be the causative agent. This situation will exist where the physician is dealing with an influenzal pneumonia. There has been considerable discussion in the past about the cause of influenza but it is now generally agreed to be due to a filterable virus. Special technique and equipment are required for growing the influenzal virus so that bacteriological study is impossible except in a few exceptionally equipped centers. Influenzal pneumonia is almost always of the atypical type.

Reimann¹⁵ has recently reported seven cases of atypical pneumonia, which after careful study, show a virus infection not related to the influenzal virus. The pneumonia following measles is most likely due to a virus. The situation as regards virus pneumonia is particularly complicated at present because of the fact that it is hard to evaluate the role of the ordinary secondary invaders such as streptococci, staphylococci and others.

SUMMARY AND CONCLUSION

1. Whereas, typical pneumonias are usually easily diagnosed clinically, atypical pneumonias have many variations and are often diagnostic problems.

2. Bacteriological diagnosis is extremely important in the present day management of the pneumonias.

3. A few characteristics of the causative organisms in pneumonia have been pointed out.

4. There is still much to be learned about the true nature of the pneumonias following virus infections.

BIBLIOGRAPHY

1. Reimann, Hobart A.: *The Pneumonias*, Philadelphia, W. B. Saunders, 1938, Chapter 12.
2. Cecil, Russel L.: *Text-Book of Medicine*, Philadelphia, W. B. Saunders, 1937, page 122.
3. McCann, William S.: *The Early Clinical Diagnosis of Pneumonia*, *Journal of The Amer. Med. Ass'n.* **109**: 2056.
4. Rosenblatt, Milton, B., and Bathman, Arnold: *Annals of Internal Medicine*, *Upper Lobe Pneumonia in the Adult*, **11**: 1845, 1938.
5. Bulowa, Jesse S.: *The Management of the Pneumonias*, *Journal Amer. Med. Association* **109**: 2061, 1937.
6. Cecil, Russel T., and Lawrence, E. A.: *Pneumonia in Private Practice*, *J.A.M.A.* **111**: 1889, 1938.
7. Bulowa, Jesse S.: *The Management of the Pneumonias*, *J.A.M.A.* **109**: 2063, 1938.
8. Toplin, George V. et al: *Concentration Method applicable to the Neufeld Quelling Reaction in Sputums*, *J.A.M.A.* **111**: 410 July 30, 1938.
9. McCann, William S.: *The Early Clinical Diagnosis of Pneumonia*, *J.A.M.A.* **109**: 2056, 1937.
10. Same as 5.
11. Finland, Maxwell and Brown, J. W.: *Specific Treatment of Pneumonias; Type 1 Pneumonia, Including the Use of Horse and Rabbit Antipneumococcic Serum and Sulfanilamide* **197**: 151, 1939. *American Journal Medical Science*.
12. Reimann, Hobart, A.: *The Pneumonias*, Philadelphia, W. B. Saunders, 1938, Chapter 1.
13. Cecil, etc.—Same as 5.
14. Bulowa, Jesse S. and Gleich, Morris: *A Companion of the Etiology, Death Rates and Bacteremia Incidence in the More Frequent Primary Pneumonias of Infants, Children and Adults*, *Amer. Journal Medical Science* **196**: 707, 1938.
15. Reimann, H. A.: *An Acute Infection of the Respiratory Tract with Atypical Pneumonia*, *J.A.M.A.* **111**: 2377, 1938.

GENERAL MANAGEMENT OF PNEUMONIA

M. HERBERT BARKER, M. D.

CHICAGO

Pneumonia is recognized as one of the great medical emergencies with a high mortality. A reduction of this mortality is being brought about by its earlier recognition and the prompt application of specific serum, chemotherapy and alert physiologic support of the patient. My part of this symposium is limited to remarks on the general medical management of pneumonia as it is understood today. Since thirty per cent. of pneumonia cases cannot be typed for specific serum therapy and because of the streptococcus, the Friedlander and influenzal varieties, general medical features of nursing care, rest, food, fluids, oxygen and cardiovascular support con-

Read before Section on Medicine, Illinois State Medical Society, Rockford, May 3, 1939.

From the Pneumonia Service of Passavant Memorial Hospital and Northwestern Medical School, Chicago, Ill.

time to be the fundamentals of the treatment of all pneumonias.

HOSPITALIZATION

All features of medical management are facilitated by moving the patient to a hospital whenever pneumonia is suspected or diagnosed. Whenever the onset has the so-called typical features of chill, pain in the chest, and cough with bloody sputum, the diagnosis is readily made, so that sputum typing and specific measures may be promptly carried out. However, a large number of patients have an insidious onset in that they have been suffering from a cold which has merely "grown worse." In these cases the chill and cough may be absent or they are very slight and it may be impossible to obtain sputum. On the pneumonia service at Passavant Memorial Hospital in Chicago, eighty per cent. of the pneumonias that have been admitted to this institution in the past ten years have shown insidious onsets, or they have been of a bazaar nature, presenting the picture of shock, an acute abdominal condition, renal crises or other infections. Under such circumstances the diagnosis of pneumonia cannot be made by the careful history and physical examination alone but it requires the application of all of the facilities which the hospital may offer, including x-ray examination of the chest, urine studies, blood counts, and blood cultures, together with repeated searches for specific pneumococci in the respiratory tract. The latter is facilitated by changes of the position of the patient, sharp slaps over the chest, turning them in the lateral positions with the arm high over the head, and encouraging deep coughs. The utilization of the throat swab and occasionally the tracheal catheter, or the washing of the patient's stomach, may recover the organism producing the disease. It must be emphasized that the respiratory tract may carry more than one type of pneumococcus and that specific serum therapy is to be most efficiently applied by repeated sputum typing, blood cultures, and mouse inoculations.

Pneumonia is a communicable disease which increases with virulence as it passes from host to host, so that the proper isolation of the patient adds protection not only to other members of the family but to those in attendance as well. Further reasons for hospitalization are that the physical comfort of the patient is facilitated by adjustable beds, ample nursing equipment, in-

cluding special set-ups for the administration of fluid, transfusing, the giving of serum, the combating of shock and reactions, the clinical determinations of blood sulfapyridine, blood chlorides, carbon dioxide, as well as blood counts and immune body tests.

NURSING CARE

Never before has nursing care been as important as that now required in the modern management of pneumonia. Nurses are preferred who have had much experience in creating a reassuring and quiet atmosphere and who are able to tactfully protect the patient from strenuous or apprehensive relatives and friends. Since the patient's strength is to be conserved in every way she should anticipate his needs. The grouping of the administration of food, fluid, and medications, together with similar attention to changing the patient's positions and attention to his elimination, are all important features of excellent nursing. Assistance in the administration of serum, parenteral fluid, the collection of specimens, the watching for shock, reactions, prompt application of therapeutic measures, are all important duties of the skilled nurse. Close observation and the continuous recording of all data, supplies the physician with the details necessary for the proper evaluation and treatment of this rapidly changing disease. It is to be recommended, therefore, that physicians give more attention to the detailed instruction of nurses, not only in the training schools, but to those who are already in private duty.

FLUID

The question frequently arises as to the amount and the nature of the fluid to be given to the pneumonia sufferer. This naturally depends somewhat upon the height and duration of the fever. It is my opinion that 3,500 to 5,000 cc. of fluid should be administered daily, chiefly as water. Fruit juices should be given very sparingly and then only as flavoring materials, such as lemonade or limeade. Since the pneumonia victim gradually develops an alkalosis if the disease is not terminated in the first three to four days, and since such an alkalosis interferes greatly with oxygen transport into the body, alkalizing substances such as the citrus fruits or alkaline powders should be withheld. When we know that the carbon dioxide may mount up to, and occasionally over one hundred volumes per

cent., it is evident that such an alkalosis is in itself a serious disorder. When the patient is unable to drink the prescribed amount of fluid, intravenous solutions of five or ten per cent. glucose are recommended. At this point I wish to state that it is my belief that sodium chloride solutions should not be used except 100 cc. per 100,000 units of serum to insure the intravenous injection of the serum. Work done by Simpson* and myself in our pneumonia research laboratory at Northwestern University clearly demonstrated that the well known disappearance of the chlorides from the urine and the reduction of the chlorides in the blood of the pneumonia victim are to be found in the diseased lung and its fellow. When salt solutions are given in the presence of pneumonia, pulmonary edema occurs and a sharp rise in the mortality ensues. This has been demonstrated not only experimentally but clinically, so that we regard the administration of salt solution as a dangerous procedure. It may be stated that the low blood chlorides and the alkalosis under discussion may be better combated by the oral administration of six to eight grams of ammonium chloride daily.

FOOD AND OXYGEN

We are in agreement with other students of the problem that 2,500 to 3,000 calories per day of simple, easily assimilable foods are to be offered. Such caloric support safeguards the functions of the myocardium, kidney and liver. The distention, nausea, and diarrhea are attributable to the toxicity of the disease and anoxia. Although the indications for the administration of oxygen may still be debated, the beneficial effects of oxygen in the pneumonia patient has been well established, the chief of which are the restlessness, nervousness and delirium are reduced. The temperature, pulse and respirations are lowered. Cough, expectoration and the migratory tendency are checked.

TABLE I

Effects of Oxygen Therapy in Pneumonia

- (1) Restlessness, twitching, delirium relieved.
- (2) Heart rate (output) decreased.
- (3) Respiratory rate and effort decreased.
- (4) Cyanosis improved.
- (5) Temperature reduced.
- (6) Distension relieved and appetite improved.
- (7) Renal function improved.
- (8) Pulmonary edema, cough and expectoration decreased.
- (9) Migratory tendency checked.
- (10) Mortality reduced.

Distension is prevented or relieved, and the mortality is reduced. The most striking thing is the gross comfort which the patient derives as the anoxia is corrected. Experimental types I and II pneumonia in rats and dogs, carried on by Simpson and myself, have shown a prolongation of the lives of these experimental animals with an ultimate recovery of fifteen per cent. in the group receiving fifty or more per cent. oxygen in the inspired air, as compared to the early and one hundred per cent. death rate of the untreated controls.

TABLE 2

Types I and II Pneumonia in Rats; Effect of Oxygen on Mortality

Day of Disease	Control	Oxygen
1	..	..
2	45	19
3	71	56
4	100	70
5	..	81
6	..	85
Survivals	0	15

The past ten years has brought us to the position of administering oxygen continuously of fifty or more per cent. concentration to every patient who has pneumonia. Not only is the patient more comfortable, but his nursing care becomes much more simple and the mortality rate is reduced. Even though specific serum or sulfapyridine are given, oxygen should be administered until the patient is considered to be out of danger. Since the cyanosis of sulfapyridine masks the anoxia of the pneumonic process, and since the nausea and nervous symptoms of sulfapyridine toxicity seem to be benefited by oxygen, it is our practice to administer full therapeutic amounts of oxygen during the full period of sulfapyridine influence.

As to the methods of administering oxygen, our institution affords oxygen rooms, tents, masks, catheters, etc. The oxygen rooms are indispensable to the delirious patient who cannot be kept in a tent or who requires surgical or excessive nursing care. Many such patients are managed by the catheter technique. The larger transparent canopy is preferred when tents are used in that patients are less apprehensive and do not feel the sense of being enclosed. Careful attention must be given to keeping the patient well tucked in and to the repeated determination of the oxygen concentration in the tent, so that it reads well over fifty per cent. Likewise, the temperature should be kept well under seventy degrees and the humidity should be kept

*Thomas Simpson, Leeds, England, Fellow in Medicine, Northwestern University Medical School, Chicago, Illinois.

under sixty. The carbon dioxide should not be allowed to rise over 1.0 per cent. because it is our personal experience that most people do not tolerate over 2.0 per cent. carbon dioxide without showing restlessness and fatigue to such an extent that they will insist on throwing off the tent. In order to insure a fifty per cent. alveolar oxygen saturation by nasal catheter, a flow of ten to twelve meters per minute is required.

TABLE 3*

Effects of Rate of Oxygen Flow and Respiratory Rate on Concentrations of Oxygen and Carbon Dioxide in Alveolar Air

Oxygen Flow per Minute	Percentage of Alveolar Oxygen at Respiratory Rates of:				Percent. of Alveolar Carbon Dioxide
	6	16	30	60	
4 liters.....	34	30	31	35	5.0
6 liters.....	46	35	37	40	5.2
8 liters.....	52	40	43	45	5.4
10 liters.....	62	44	48	49	5.3
12 liters.....	71	50	52	54	5.2
15 liters.....	74	56	60	60	5.0

Failures of oxygen administration by nasal catheter occur whenever the tip of the catheter is not placed near or just above the tip of the uvula, or when the oxygen is not adequately humidified in an approved humidifier, and whenever the catheter is allowed to remain in the nostril too long so that many of the holes are obstructed. In our experience, therefore, it matters little what method one uses so that he gives a full therapeutic dose of oxygen and keeps his equipment in proper order to insure his patient's receiving it.

BLOOD TRANSFUSIONS

Adequate oxygen therapy depends not only upon good equipment and the surrounding of the patient with an oxygen enriched atmosphere, but he must have an adequate amount of hemoglobin to absorb and carry the oxygen. The first two days of a pneumonia usually shows the red count to be a high normal but as the disease goes on, over one-half of the victims show a rapid decrease in the red blood count and hemoglobin content. Our experience has been that it is not wise to allow the red blood count to fall below 4,250,000. As many as six transfusions of 500 cc. each may be required in the course of a pneumonia to hold the blood arterial oxygens up to the required ninety per cent. With the advent of sulfapyridine and its occasional depression of the red cells, a daily red count and the frequent transfusing of blood may be required. Our personal experience with the prolonged anemic effect of sulfa-

pyridine requiring multiple transfusions weeks after the pneumonia has subsided has been observed by others. No difficulties or undue reactions have been experienced by such transfusions and their support has been so well defined that it is our policy to transfuse the pneumonia patient whenever the blood count falls below 4,250,000.

SYMPTOMATIC CARE

Quiet and rest are to be obtained by not only the establishment of pleasant surroundings, good nursing care, and the administration of oxygen, but sedatives such as the barbiturates are to be recommended. There are many slow, as well as quick acting barbiturates on the market, which are usually adequate to keep the patient in a dozing state without depressing him. Codeine is to be given by mouth or hypodermic $\frac{1}{2}$ to 1 grain at a time, if pain or cough disturb the patient's rest. Pain, as such, is generally plural in origin and it may be relieved by a chest swathe and the administration of one (1) grain doses of codeine. Morphine may be given if pain is not otherwise controlled. Doses of one-sixth to one-fourth grain by single order may be advised, but the giving of morphine for restlessness which is due to anoxia is to be thoroughly frowned upon. Delirium may be due to anoxia which may be relieved by high concentrations of oxygen, while the delirium of the toxicity of the disease is better treated by type specific serum and the intravenous administration of one of the barbiturates. Avertin anesthesia may be very effective in uncontrolled delirium, especially when chronic alcoholism is a factor.

CIRCULATORY SUPPORT

Circulatory symptoms may be divided into the peripheral vascular, and cardiac manifestations. Specific cardiac support must be individualized and applied to those patients actually requiring it. Since pneumonia generally attacks the middle age group who have excellent hearts, it is not surprising that digitalis or allied heart drugs have very little beneficial effect. As a matter of fact, the tachycardia or the cardiac irregularities, so frequently seen in the course of pneumonia, are usually only relieved by adequate and continuous oxygen therapy. Shock may occur at the time of the severe pneumococcus invasion and it may be aided by keeping the patient warm, the administration of oxygen, together with the in-

*Reproduced from "Nasal Catheter Administration of Oxygen," Barker, Parker, and Wassel, J.A.M.A., July 28, 1934.

travenous administration of ten per cent. glucose solutions containing one (1) cc. of adrenalin per liter, until the period of shock has passed. Terminal shock, which is associated with respiratory and cardiac failure as well, offers no great hope for therapy, but the administration of high concentrations of oxygen (as near 100 per cent. as possible), the intravenous administration of ten per cent. glucose with one (1) cc. of adrenalin per liter, the transfusion of blood if the blood count is under 4,000,000, and the combating of alkalosis if it exists, may tide the patient over an otherwise fatal episode.

SUMMARY

My remarks in this symposium on pneumonia may be summarized by saying that:

1. Hospitalization of the pneumonia victim is to be urged because of facilitating the early diagnosis and the carrying out of specific and general medical measures.

2. Excellent nursing should serve as the most important adjunct in effecting adequate pneumonia therapy.

3. Careful attention to the physiologic demands regarding food, fluid, oxygen, and the combating of alkalosis and anemia as it may develop.

4. The symptomatic care of rest, pain, delirium, and circulatory support are to be carefully evaluated and individualized.

700 North Michigan Avenue.

SERUM AND DRUG THERAPY IN PNEUMOCOCCUS PNEUMONIA

ITALO F. VOLINI, M. D.

ROBERT O. LEVITT, M. D.

N. LOUIS CAMPIONE, M. D.

CHICAGO

In very few diseases is there the record of steady upward progress such as the treatment of pneumococcus pneumonia has made. Rapid advances have been accomplished within the past few years through outstanding achievements by first, the concentration and refinement of antipneumococcus horse serum; second, the introduction of rabbit serum with its subsequent perfection of very potent concentration and thirdly,

chemotherapy. The advent of sulfapyridine already threatens the continuation of the routine usage of antipneumococcus serum as a therapeutic agent. Investigators in this field must as a result, shift their activities rapidly to test the worth of these newer advances, first, in order to evaluate and confirm the efficacy of such new procedures, and, secondly, to put into practice as quickly as possible these new methods which save more lives. This paper illustrates such rapid activity movements.

Our early work with antipneumococcus horse serum was discontinued because of the advantages demonstrated by the rabbit serum. The rabbit pneumococcus antibody molecule is one-fourth the size of the horse serum antibody molecule, thus affording much greater effective penetration into the pneumococcus infected areas and body cavities. Concentration and refinement permits of sera with very high titre of unitage so that the therapeutic dosage can be administered in very small amounts rendering the technique of administration much easier, with the patient receiving much less foreign protein.

Experience with the use of antipneumococcus rabbit serum in 153 patients has convinced us of its superiority over horse serum. These patients were unselected, the availability of serum being the only criterion for nontreatment. The typing was accomplished by the Neufeld technic applied to the sputum. Blood cultures were routinely employed. Where necessary sputum culture, lung suction and mouse inoculation were utilized. Diagnosis when not sufficiently substantiated by adequate physical signs was always proved by x-rays study before treatment was initiated.

The sensitivity tests for rabbit serum consisted of the ophthalmic, the intracutaneous and the intravenous pressor tests. The latter two procedures were so frequently equivocal in their results that we had to rely practically solely on the ophthalmic technique. In the entire series there were no positive ophthalmic reactions. The intracutaneous test was frequently positive. The pressor test revealed alterations of pulse rate in several instances. The serum administration did not produce one occurrence of an immediate reaction, nor was there any correlation between positive skin tests and thermal reactions or late serum effects. The latter, in the form of fever, erythema, urticaria, arthralgia, alone, or in combination, appeared in 28% of the patients,

From the Cook County Hospital, Chicago and Loyola University School of Medicine.

Read before Section on Medicine, Illinois State Medical Society, Rockford, May 3, 1939.

seven to fourteen days after injection. Thermal reactions were low in incidence in this series occurring in only 8% of the last sixty-nine consecutive patients treated by our single total dose method.

The results of rabbit serum therapy can best be evaluated by referring to the control series first. These patients were given routine therapy, namely fluids, oxygen, supportive and symptomatic measures without serum. This investigation was initiated before free serum was distributed by the State pneumonia control program and what serum we received was donated by the manufacturers. Today we believe an untreated control series is unjustifiable as a study because of the very high mortality in a non-treated group of patients.

Table 1, the non-treated controls, comprises 164 patients with 63 deaths, a total mortality rate of 38.4%, with twenty-one different types of pneumococci. There were thirty-six patients over fifty years of age, with twenty-four deaths, a mortality of 66.7%. Thirty patients had positive blood cultures, of whom 18 died, a mortality rate of 60%. Attention is directed to each individual type, and the number of deaths in each type with the percentage mortality. The tabulation illustrates vividly the very much higher mortality found in the bacteremic cases.

Table 2 presents the data in the anti-pneumococcus rabbit-serum treated series with a total of 153 patients. These were similar in age and sex grouping to the controls. The time incidence is the same as this is, practically an alternate case study. Bacteremia was slightly higher in the controls. There were fifteen deaths in the series, a mortality rate of 9.8%. However, four death occurred within eighteen hours of treatment. Two of these deaths had Type III infection, one was Type VII and the remaining one Type VIII.

These four should be discarded, permitting a corrected mortality of 7.2%. The bacteremia figures are most important, twenty-three positive blood cultures with six deaths, a mortality rate of 26% compared with the 60% mortality in the controls. The analysis of Type-I reveals a 6% mortality in thirty patients treated with serum, compared to 26% mortality in forty-nine patients for the controls. The bacteremia figures are equally striking. The serum treated showed a 16% mortality with 40% for the controls.

Type III had a 21% mortality in fourteen patients. If permitted to discard the two patients who died a few hours after therapy, the mortality rate would be 8% compared to 61% in our controls.

Type VII comprised a large number of the rabbit-serum treated patients. The mortality rate was 7.6% in twenty-six patients, compared to 35% in the control statistics. In Type VII infection, the mortality in the non-serum treated bacteremic controls was 100% in four patients, while two or three bacteremic Type VII patients were saved by rabbit serum.

These figures definitely demonstrate the efficacy of antipneumococcus rabbit serum as a therapeutic agent in pneumococcus pneumonia. The effectiveness is indicated by mortality figures showing death occurring five times more often in the non-serum treated controls. Such effectiveness in biological therapy is probably surpassed only by diphtheria antitoxin in the treatment of diphtheria. Table 3 illustrates the unitage and dosages which were employed in the various types of infecting pneumococci.

Our experience with sulfanilamide has not been as satisfactory as reported by other investigators. In ninety-seven patients with a type distribution similar to both the control and rabbit series the mortality rate was 28%. This is better than the general mortality of the control series but does not approach the results obtained with rabbit serum. The dosage employed was adequate, averaging from six to nine grams daily. A study of the blood concentration of sulfanilamide is illustrated by the tabulation.

These figures are relatively low. We explain this fact by stating that fluids were administered intravenously in large amounts daily so that a drug as readily diffusable as sulfanilamide was quickly washed out of the circulation. We are forced to conclude from this experience that sulfanilamide is not especially effective in pneumococcus pneumonia.

Sulfapyridine: With the reports of Whitby,⁶ Evans and Gaisford,⁷ corroborated by the extremely favorable results obtained by investigators in this country,^{8,9} sulfapyridine has rapidly assumed an active and potent position in the antipneumonia armamentarium. Through sulfapyridine, chemotherapy threatens to displace the exalted position held by serum therapy. Sulfapyridine is relatively insoluble. It is

slowly absorbed from the gastro-intestinal tract. Nausea and vomiting are frequently induced. All of these factors tend to interfere with an adequate concentration of the drug in the blood. These difficulties will be readily obviated when the soluble injectable sodium salt is more readily available.

The drug has not affected the ordinary routine of typing and blood culture studies when the disease is still active. The dosage employed usually consisted in the initial administration of two grams followed by one gram doses at four-hour intervals continued for forty-eight hours after the temperature became normal, then continued for several days at six-hour intervals. The blood concentration levels for both free and conjugated sulfapyridine were estimated frequently. Blood counts were taken almost every day while the drug was administered.

Untoward Effects: The most common difficulty encountered was the nausea and vomiting. Vomiting occurred in 12 out of 60 patients, in four patients necessitating discontinuance of the drug. There were no instances of skin or kidney reactions in this series. The white blood count was not affected. The red cells, however, were definitely diminished, showing an average drop of one million cells, with a maximum of 1,500,-000 in forty-eight hours. Blood transfusion was used in one patient.

Results: The patients treated with sulfapyridine were unselected. Typable pneumococcus

TABLE I						
Control Types of Cases Not Treated With Serum						
Type	No.	Deaths		Bacteremia		
		No.	Percent	No.	Dead	Percent
I	49	13	26	10	4	40
II	34	16	47	6	4	67
III	18	11	61	1	1	100
IV	3	2	67	0	0	0
V	6	5	83	4	3	75
VI	2	0	0	0	0	0
VII	17	6	35	4	4	100
VIII	8	1	12	2	1	50
IX	3	1	33	0	0	0
X	1	0	0	0	0	0
XII	5	2	40	1	0	0
XIII	2	0	0	1	0	0
XIV	2	0	0	0	0	0
XVI	1	0	0	0	0	0
XVII	2	0	0	0	0	0
XVIII	2	2	100	0	0	0
XIX	5	2	40	1	1	100
XXI	1	0	0	0	0	0
XXIII	1	1	100	0	0	0
XXVIII	1	1	100	0	0	0
XXIX	1	0	0	0	0	0
Totals	164	63	38.4	30	18	60

TABLE 2						
Types of Serum Treated Cases						
Type	No.	Deaths		Bacteremia		
		No.	Percent	No.	Dead	Percent
I	30	2	6	6	1	16.7
II	34	3	8.8	6	3	50
III	14	3	21	0	0	0
IV	11	1	9	2	0	0
V	2	0	0	1	0	0
VI	1	0	0	0	0	0
VII	26	2	7.6	3	1	33
VIII	16	3	18	0	0	0
XII	2	0	0	0	0	0
XIV	2	1	50	1	1	100
XV	1	0	0	0	0	0
XVII	1	0	0	0	0	0
XVIII	3	0	0	1	0	0
XIX	1	0	0	0	0	0
XX	1	0	0	0	0	0
XXIII	1	0	0	1	0	0
XXIV	1	0	0	1	0	0
XXV	2	0	0	0	0	0
XXVIII	1	0	0	0	0	0
XXIX	2	0	0	1	0	0
XXXI	1	0	0	0	0	0
Totals	153	15	9.8	23	6	26
Corrected Mortality (4 deaths under 18 hours) 11 deaths 7.2%.						

pneumonia are alone included here. We did not control this series with untreated contemporary comparisons for several reasons. First, pneumonia mortality in our institution for the past five years in non-serum treated cases has averaged from 30% to 39%. This is mainly due to the class of patients which we receive, a majority, undernourished, suffering from extreme exposure, and a high incidence of alcoholism. No investigator has the right to decide to withhold a treatment which has demonstrated it will save twenty-five to thirty lives which would otherwise have been lost, where one hundred pneumonia patients are admitted. We believe the day has passed for the untreated pneumonia control series.

Secondly, this sulfapyridine series cannot be criticized by the statement that the pneumonias were benign. For example, Type II is a virulent form of pneumococcus infection. It constituted 25% of our series with a bacteremic incidence of 30%. Yet we did not lose a patient of this type. Thirdly, the age tabulation indicates that the pneumonia frequency was high after fifty years of age but that recovery ensued on sulfapyridine treatment.

The results of the study with sulfapyridine therapy are indicated in Table 5. Sixty patients were treated, with 2 deaths, a mortality rate of 3.3%. The bacteremic incidence was 25% or 15 in number with no deaths. There were no deaths in Type I despite four positive blood cul-

TABLE 3
Dosage Analysis (Includes Total and Repeated Doses)

Type	No. of cc. per Patient			No. of Units per Patient		
	Aver.	Max.	Min.	Aver.	Max.	Min.
1.....	33.5	120	10	123,800	250,000	100,000
2.....	27	55	14	117,600	240,000	46,500
3.....	51.8	120	12	135,000	180,000	100,000
4.....	26	40	15	155,600	231,000	92,500
5.....	20	20	20	120,000	120,000	120,900
6.....	20	..	..	160,000	.....	.....
7.....	21.6	50	5	210,000	450,000	70,000
8.....	27.6	40	18	139,300	180,000	70,000
12.....	38.5	40	37	116,000	120,000	111,000
14.....	38	40	36	180,000	180,000	180,000
15.....	100	..	..	400,000	.....	.....
17.....	20	..	..	60,000	.....	.....
18.....	33	40	20	133,000	160,000	80,900
19.....	41	..	..	165,000	.....	.....
20.....	40	..	..	200,000	.....	.....
23.....	40	..	..	120,000	.....	.....
24.....	80	..	..	240,000	.....	.....
25.....	32.5	45	20	140,000	180,000	100,000
28.....	40	..	..	120,000	.....	.....
29.....	41	..	..	165,000	.....	.....
31.....	40	..	..	120,000	.....	.....

The unitage presented, as described on the manufacturer's label.

TABLE 4
Sulfanilamide Blood Concentration Milligrams per 100 cc.

	Free	Conjugated	Total
Average	4.24	1.57	5.82
Maximum	8.13	2.7	11.0
Minimum	0.7	1.2	1.9

TABLE 5
Sulfapyridine Treated

Type	No.	Deaths		Bacteremia		
		No.	Pct.	No.	Deaths	Pct.
I	14	0	0	4	0	0
II	16	0	0	6	0	0
III	5	0	0	0	0	0
IV	1	0	0	0	0	0
V	2	0	0	1	0	0
VII	10	1	10	2	0	0
VIII	3	1	33	0	0	0
IX	1	0	0	0	0	0
XII	3	0	0	1	0	0
XVI	1	0	0	1	0	0
XVIII	1	0	0	0	0	0
XIX	1	0	0	0	0	0
XXIII	1	0	0	0	0	0
XXIV	1	0	0	0	0	0
Total	60	2	3.3	15	0	0

tures. Type II has already been referred to. While this series is admittedly small, nevertheless the study is most significant. Table 7 shows the blood concentration levels; the average, the maximum and minimum milligrams attained for free, conjugated and total sulfapyridine. Table No. 8 graphically demonstrates the blood and urinary levels studied in two patients upon the stated dosage throughout the course of the disease. In the two patients who succumbed, the blood concentration levels for free sulfapyridine were 11.6 mgm. and 4.3 mgm. respectively. Table 6 shows many recoveries with much smaller blood concentration levels. The inference is that the prognosis is not determinable by the concentration level in the blood.

Comments: We believe a comparison between these various groupings of patients is permissible for reasons stated above. Serum treatment and chemotherapy both demonstrate remarkable

TABLE 6
Age Groups Sulfapyridine Treated

Age	No.	Deaths		Bacteremia	
		No.	Pct.	No.	Deaths
11-20.....	6	0	0	2	0
21-30.....	14	0	0	3	0
31-40.....	14	0	0	3	0
41-50.....	10	0	0	4	0
51-60.....	12	1	8.5	2	0
61-70.....	3	1	33	0	0
71-80.....	1	0	0	1	0
Total.....	60	2	3.3	15	0
Patients over 50 years of age...	16	2	12.5	3	0

TABLE 7
Sulfapyridine Concentration in the Blood Milligrams per 100 cc.

	60 Patients			132 Analyses		
	Average	Maximum	Minimum	Average	Maximum	Minimum
Free	7.05	11.6	1.2	Free	7.05	11.6
Conjugated	2.03	3.7	0.10	Conjugated	2.03	3.7
Total	9.75	13.2	1.4	Total	9.75	13.2

TABLE 8
A Study of Two Patients Illustrating
Concentration of Sulfapyridine in the Blood and Urine

Date	4/18	4/19	4/20	4/21	4/22	4/24	4/25	4/26	4/27
1. A.C. Age 39 Type VII									
Oral dose in grams 13.0....	4	6	3	0	0	0	..	..	..
Blood Mgm per 100 cc....	..	8.4	4.6	4.5	Trace	None	..	..	..
Urine Mgm per 100 cc....	..	..	..	..	..	25	Trace	None	..
Free .....	..	..	105	..	..	..	..	..	..
Conjugated .....	..	..	30	..	..	..	..	..	..
Total .....	..	..	135	..	..	..	..	..	..
2. A.A. Age 43 Type XII Positive Blood Culture									
Oral dose Grams 39.0....	6	6	6	6	6	4	4	1	..
Blood Mgm per 100 cc....	..	7.2	4.4	3.6	4.9	5.3	4.9	Trace	None
Urine Mgm per 100 cc....	..	..	..	..	..	..	..	..	..
Free .....	..	..	103	..	..	108	66	72	Trace
Conjugated .....	..	..	56	..	..	..	23	18	..
Total .....	..	..	159	..	..	..	89	90	..
Lobes and Complication....	R.M.L.	R.U.L.				Pleural Effusion			Recovery

results when compared to the untreated controls. Sulfapyridine has definitely achieved an unsailable position as an excellent treatment for pneumococcus pneumonia. The rapid descent of the temperature to normal is a typical response. The ease of administration, the low cost comparatively, the freedom from serious reactions, and minimal toxicity in our hands, all favor the use of sulfapyridine. Supportive and symptomatic therapeutic measures have been reduced very greatly, with a consequent important reduction in the cost of care, including thus both the initial and total expense and the nursing care.

Can the combination of antipneumococcus serum and sulfapyridine enhance the already favorable results where these two therapeutic agents are utilized alone? Or is the irreducible minimum attained by the individual application of these remedies? Is not the reduction to the irreducible minimum to be secured by the earlier institution of the individual therapy? It must be understood that biochemical, physiological and pathological changes in the human body produced by disease reach a point where reversibility to health or normal cannot result through any medium. Irreversibility cannot be altered by a combination of therapeutic agents any more than by their employment singly and individually. Very careful analyses must determine this solution by newer studies meticulously controlled.

Summary and Conclusions: Serum treatment and chemotherapy, individually and single, are both effective therapeutic methods in the treatment of pneumococcus pneumonia. Our studies indicate a reduction in mortality to one-fourth or one-fifth of the mortality in the non-treated control series. Our experience favors the use of sulfapyridine for the various reasons outlined in this paper. Serum should be employed where the drug cannot be used or where improvement does not result from chemotherapy. Naturally, great difficulty will be encountered in the application of this latter indication.

The Cook County Hospital, Chicago.

BIBLIOGRAPHY

1. Gooder, K.; Horsfall, F. H., and Dubos, R. J.: Type Specific Antipneumococcic Rabbit Serum for Therapeutic Purposes, *J. Immunology* 33: 279, 1937.
2. Horsfall, F. H.; Goodner, K.; McLeod, R. M., and Harris, A. H.: Antipneumococcus Rabbit Serum as a Therapeutic Agent in Lobar Pneumonia, *A.M.A.* 108: 1485, 1937.
3. Horsfall, F. L.; Goodner, K.; and McLeod, C. M.: Antipneumococcus Serum as a Therapeutic Agent in Lobar Pneumonia, *N. Y. State J. M.* 38: 245, 1938.
4. Laughlin, E. H.; Bennett, C. H., and Ipitiz, S. H.: Treatment of Lobar Pneumonia with Rabbit Antipneumococcus Serum, *J.A.M.A.* 111: 497, 1938.
5. Bullava, Jesse, G. N.: Management of Pneumonias—Oxford Univ. Press, N. Y. 1937.
6. Finland, M., and Brown, J. W.: Specific Treatment of Pneumococcus Type I Pneumonia, *Amer. Jour. Med. Sci.* 197: 151, 1939.
7. Evans, G. M., and Gaisford, W. F.: Treatment of Pneumonia with 2—(p. aminobenzenesulfonamido pyridine) *Lancet* 2: 14, 1938.
8. Flippen, H. F.; Lockwood, J. S.; Pepper, A. S., and Schwartz, L.: Treatment of Pneumococcic Pneumonia with Sulfapyridine; Progress Report on Observations in 100 Cases, *J.A.M.A.* 112: 529, 1939.
9. Marshall, E. K., Jr.: Determination of Sulfanilamide in Blood and Urine, *J. Biol. Chem.* 122: 263, 1937.
10. Price, A. E., and Myers, G. B.: Treatment of Pneumococcic Pneumonia with Sulfanilamide, *J.A.M.A.* 112: 1021, 1939.
11. Whitby, L. E. H.: Chemotherapy of Pneumococcal and Other Infections with 2—(P-Aminobenzenesulphonamido) pyridine, *Lancet* 1: 1210-1212, 1938; *Lancet* 2: 1095-1103, 1938.
12. Volini, I. F. and Levitt, R. O.: The Treatment of Pneumococcic Pneumonia with Concentrated Rabbit Serum, *J.A.M.A.* 113: 1314, 1939.

THE ROENTGEN RAYS IN MANAGEMENT OF THE PNEUMONIAS

EDWIN L. RYPINS, M. D.
BLOOMINGTON, ILLINOIS

As the result of the inflammatory process in any form of pneumonia there occurs an exudation of substances from the blood into the alveoli. This material tends to obstruct the passage of roentgen rays. In addition, some of the normal quantity of air in the alveoli is displaced. As the result a shadow of varying density is produced. This shadow is not specific. Its location, shape and distribution approximates the distribution and extent of the pathological process in the lung.

In lobar pneumonia the inflammatory process begins in one portion of the lobe and not infrequently portions of the lobe remain uninvolved through the entire course of the disease. During the first week, the shadow is dense and fairly uniform and when it extends to an edge of the lobe it is sharply demarcated. The opacity will gradually taper into air-containing lung tissues where the thinner portions of the lobe are situated. The time of crisis does not cause much change from a roentgen ray standpoint. The period of resolution as studied by roentgen rays lasts anywhere from one to three weeks. The uniform shadow becomes mottled and if the process is occurring in the upper lobes tuberculosis must be seriously considered in the differ-

Presented before Illinois State Medical Society, Rockford, Illinois, May 3, 1939.

ential diagnosis. Cavities often occur during resolution. These cavities are the result of liquidification of an infarcted area and the expectoration of the material. Since this material lacks odor these areas are called apu|id
| |
 necrosis. A gangrenous lung abscess rarely has any relation to lobar pneumonia. This is just another example of how the roentgen ray findings must be correlated with the clinical diagnosis in order to arrive at a diagnosis.

The ordinary form of bronchial pneumonia which in adults usually follows a benign course is best termed simple lobular pneumonia.

Suppurative bronchial pneumonia occurs often as the result of complications of sinusitis, measles, pertussis, whooping cough, influenza and aspiration of foreign bodies. When suppurative bronchial pneumonia occurs in the upper lobe pulmonary tuberculosis must again be considered and usually can only be differentiated by progress films. Lung abscess may follow suppurative bronchial pneumonia with the appearance of cavities in from 10 to 14 days with very foul sputum.

The roentgen ray appearance of bronchial pneumonia is usually that of single or multiple areas of increased density usually located near the course of the larger bronchi. These areas are of varying size and their outlines are hazy. The lesions are usually multiple. There is often variation in the different parts of the same area as well as between different areas. Resolution takes place gradually but is usually complete in from 10 to 21 days. The differentiation of bronchial pneumonia from lung abscess, bronchiectasis and even malignancies depends on the course and clinical findings. A lung abscess will eventually show a cavity. As a rule metastatic malignancy causes the lesions in the lung to be more sharply defined, but unfortunately this is not always true. Shadows due to bronchiectasis will diminish following expectoration of a large amount of sputum.

A complication of pneumonia is pleurisy with effusion. Lobar pneumonia is differentiated from pleurisy with effusion by the fact that in lobar pneumonia of a lower lobe or of the right middle lobe the costophrenic angle remains clear until all the rest of the lobe has become involved. In pleurisy with effusion the costophrenic angle is the first point which is obscured. This brings us to the question of technique which is most

important. If at all possible films of the chest should be taken in the erect or semierect position so that any fluid present will collect at the costophrenic angle. It might be well to state that it takes approximately 120 cc. of fluid to be visible and therefore a small amount of fluid may be present and not be detected by the roentgen ray. If there is any question about the presence of fluid, an upright film and one horizontal will as a rule show a shift in the density of the base of the chest, indicating that in the upright position fluid has collected at the costophrenic angle and in the horizontal position fluid has spread out over the entire lung. It is true that with rather thick, tenacious material there may be no shift in position. Encapsulated fluid will of course show no change in position. In an attempt to diagnose encapsulated fluid lateral upright films are recommended. A lateral film is of value for lesions of the right side, since the right lower lobe is thus readily visualized. In a very sick patient in whom pneumonia is suspected clinically an overexposed film of the chest may prove of value, as demonstrated by Rigler. In this way the rays penetrate the heart and show consolidations that are ordinarily covered by the heart shadow.

Powell has recently shown that the acute pneumonias often respond very well to roentgen ray therapy. He cites 231 cases which he has treated, of whom 16 have died, with a mortality rate of 7%. The cases are treated a great deal like other infections, although possibly a slightly larger dose is used as he suggested: from 250 to 350 roentgen at 135 K.V., 3 mm. of aluminum and 40 cm. distance. If improvement has not resulted in 36 hours a somewhat smaller dose is given. All Type 2 and 3 lobar pneumonia which he has treated have recovered.

SUMMARY

1. Roentgen ray examination of the chest should be done in the erect or semierect position.
2. Lateral films of the chest are recommended when at all possible.
3. The clinical findings must be correlated with the roentgen ray findings. This is especially true of lesions of the upper lobe where the possibility of tuberculosis must be considered.
4. Fluid in the pleural cavity may often be proven by taking films of the chest in the upright

and horizontal positions. A change in density with a change in position is indicative of fluid.

5. Irradiation therapy in the pneumonias should prove of value as it does in other infectious conditions.

BIBLIOGRAPHY

1. Powell, E. V.: Treatment of Acute Pneumonias with Roentgen Rays, *American Journal of Roentgenology and Radium Therapy* 41: 404-415, 1939.
2. Rigler, Leo G.: The Density of the Central Shadow in the Diagnosis of Intrathoracic Lesions, *Radiology* 32: 316-322, 1939.
3. Diagnostic Roentgenology, Thomas Nelson & Sons, 1938, New York City, New York.
4. Roentgen Interpretation, Holmes & Ruggles, 3rd Edition, Lea & Febiger, Philadelphia, Pa.
5. Graesser, James B.; Wu, Ching, and Robertson, Oswald: Physical Signs and Roentgenographic Findings in Lobar Pneumonia in Adults, *Archives of Internal Medicine* 53: 249-268, 1934.

PNEUMONIA IN CHILDHOOD

WALTER M. WHITAKER, M.D., F.A.A.P.,
QUINCY, ILLINOIS*

In discussing the topic of pneumonia in childhood, I shall try to present to you the modern interpretation of the etiology and classification of this disease with particular attention to a discussion of the recent investigations pertaining to the predominant types of pneumococcic infections occurring in childhood. Time will not permit a discussion of the pertinent diagnostic points, nor any consideration of the more common diseases to be thought of under the heading of differential diagnosis. Factors influencing prognosis will be mentioned with a few final remarks pertaining to the modern methods of chemotherapy and serotherapy as influencing this disease in childhood. A brief analysis of the author's experience with such modes of treatment concludes my remarks.

For centuries attempts have been made to classify the pneumonias in childhood from the standpoint of symptomatology and clinical findings and from the viewpoint of the pathologist. Later attempts have been made to classify the disease by x-ray findings, and more recently by a study of the etiological causes. It is safe to say, however, that no one category can be of aid in classifying all cases, but the physician must consider all the above possible angles of classification to properly diagnose the individual

case at hand. Formerly, it was sufficient for the physician to be able to say that the child did or did not have pneumonia. Then came the time when the attending man desired to be able to distinguish between the lobar and the bronchial varieties, but now it is not enough that he be satisfied with whether or not he is dealing with lobar or bronchopneumonia; he must know the specific type of pneumococcus or other bacterial agent causing the pneumonia at hand. Assuming that it is a lobar pneumonia and of pneumococcic origin, he must now attempt to learn the infecting specific type of pneumococcus and then proceed to inaugurate one of the newer modes of therapy, namely, the use of specific serum or one of the new azo dyes, more specifically, sulphapyridine. In simpler terms, when the physician today speaks to a fellow practitioner and tells him that he has a youngster with pneumonia, the most likely response to his statement will be this question, "Have you started sulphapyridine?"

It can safely be said that the vast majority of uncomplicated pneumonia occurring in childhood are due to the pneumococcus. It is an old idea that pneumonia occurring in the first year or two of life was nearly always bronchopneumonia, but that idea is definitely erroneous and carries with it the false assumption that all pneumonias occurring early in life are accompanied by a very high mortality rate. It may be said now that uncomplicated lobar pneumonia particularly in children over two years, is a relatively mild disease so far as the death rate is concerned. We must remember that lobar pneumonia may occur at any age and that bronchopneumonia may at times assume a lobar distribution.

In discussing the etiology of pneumonia, the importance of age is particularly noteworthy. It is a well known fact that bronchopneumonia occurs secondary to some infection, particularly measles, whooping cough, the common cold and the ill-defined group known as influenza. Children in the first year or two of life have little or no immunity to the causative agents of these diseases which act to lessen the infant's resistance to secondary invasion by organisms such as the hemolytic streptococci, staphylococci and the pneumococci or any combination of these, all of which may set up a virulent bronchopneumonia.

When we consider the true primary or lobar pneumonias of childhood, we must not forget

Read before Section on Medicine, Illinois State Medical Society, Rockford, May 3, 1939

*Department of Pediatrics, The Quincy Clinic and St. Mary's Hospital.

the fact that the pneumococcus is the etiologic agent in probably 80% to 90% of these cases. Pneumonia may result from contact with a child who has pneumonia, or from a carrier, or it may be of endogenous origin. There is no doubt but what 50% or more of older children may at times harbor some type of pneumococcus in their upper respiratory passages and due to some temporary loss or lowering of resistance, the disease may become evident. However, the finding of Types I, II, V, VII or VIII in the sputum is quite rare except in the presence of a true pneumococcal infection, since these are rarely normal mouth inhabitants. Today, then, we are trying to classify the pneumonias of childhood, as far as possible, on a specific etiological basis, namely, lobar pneumonia, which usually appears as an uncomplicated pneumococcal infection, and bronchopneumonia, which has a wider variation of etiology and clinical manifestations and is usually a mixed infection. However, it must not be forgotten that the pneumococcus may be the primary invader in cases of bronchopneumonia.

We must consider several rather specific types of bronchopneumonia the result of some peculiarity of the infecting organism or an unusual response on the part of the host. Streptococcal pneumonia is distinguished as being a rather severe type of bronchopneumonia, associated with hemorrhage into the pleura and often empyema. It should be diagnosed or suspected if the pneumonia is secondary to a specific sore throat or scarlet fever or if the streptococcus is isolated from the blood stream or pleural cavities.

Pneumonia due to the staphylococcus is particularly important in the first six to twelve months of age. This organism has a characteristic tendency of producing multiple abscesses in the lungs with associated empyema. This tendency to widespread infection is usually merely an indication of an accompanying blood stream infection with the same organisms. The diagnosis must be confirmed in these cases by either blood cultures or pleural fluid cultures. While the very nature of this type of infection rightfully presupposes a high mortality rate, yet cases of recovery are reported by the early recognition and treatment of the accompanying empyema, associated, of course, with other supportive measures. There is a possibility that the new staphylococcus antitoxin of Julianelle of St. Louis may be of value in these cases. Fortu-

nately, this variety is not a common type of bronchopneumonia. The author recently saw one such case. However, that began as a supposed grippal infection which was rapidly followed by marked dyspnea and cyanosis with purulent sputum, which on examination revealed loads of the *Staphylococcus aureus* in pure culture and the typical "cotton ball" x-ray evidences, with fatality within 48 to 72 hours from the onset of the pneumonia. Many will recall that this type of pneumonia was observed in many of the Army Camps associated with the influenzal epidemic in 1917-18.

Recently Trask¹ has considered the Pfeiffer Bacillus as a common complicating organism in bronchopneumonia of childhood. Many autopsies on children dying from pneumonia revealed the association of the organism with a Type III pneumococcus. Pathologically, it has been shown that the influenzal types of pneumonias in children are characterized by a bronchial infection which spreads downward, causing obstruction of the smaller bronchioles. As a result of this necrotic obstruction some air can enter the terminal alveoli but it cannot escape and a rather characteristic type of asthmatic breathing with dyspnea and hyperresonance to percussion is noted. I think that it is well that we call to mind here that the Pfeiffer Bacillus or the influenzal bacillus is not considered today as having any etiologic relationship to the disease commonly known as influenza.

The diagnosis of capillary bronchitis is usually made by the detection of generalized fine rales with rather marked cyanosis and dyspnea in younger children. Usually there is no distinct area of localized consolidation discernible. I think it is only proper today to consider these cases as cases of bronchopneumonia. Certainly, the majority of these cases are more than a simple bronchitis, as evidenced by their clinical course and the manifestations of illness which the child presents. Two other types of pneumonia of bronchopneumonic character which one may occasionally see in infancy are lipid pneumonia, due to the inhalation of oils or fats, and kerosene pneumonia, due to the aspiration of common coal oil into the lungs. In this geographical area where respiratory illnesses of the nose and throat are so prevalent with widespread usage of various types of nose sprays and drops, I think it well that we pause to consider for a moment the lipid type of pneumonia.²

Pulmonary changes due to lipid irritation are probably more common than suspected. The disease is characterized by a rather chronic course, often of months' duration. Due to the anatomy of the bronchial tree the right lung is more often invaded than the left. Usually there is no fever unless some secondary infection supervenes. The usual substances which may produce this type of irritation in the lung are cod liver oil, mineral oil and milk fat. It has always been quite interesting to me why we do not see more children who are victims of foreign material in the trachea than we do see, but in the normal infant the larynx apparently functions quite efficiently as a safety device for the trachea. This type of pneumonia should be suspected in marantic babies or in those who for some reason or other may have a suppressed cough reflex, or in whom vomiting may have been the outstanding symptom, or in instances where there has been frequent and prolonged use of oily nose drops. It is known that the animal oils are much more irritating than the majority of vegetable oils, since they contain a large amount of fatty acid. Further evidences that the clinician may be dealing with this type of pneumonic process is evidenced by the x-ray findings, which show rather characteristic patches of consolidation extending outward from the hilus, usually more marked on the right side due to the anatomical contour of the right bronchus, allowing aspiration of the oil into that particular location.

The importance of the common household fuel, kerosene, as a cause of pneumonia in infancy has not received much consideration in pediatric literature. Undoubtedly, the condition is a much more common happening than medical literature denotes. It has long been recognized that the inhalation of the vapor of kerosene was toxic, but not much attention was accorded to the possibility of aspiration of the oil into the lungs, with subsequent lung damage. It has been the unfortunate privilege of the author to see three rapidly fatal cases of bronchopneumonia, proved at autopsy, due to aspiration of coal oil into the bronchial tree following strangulation by the oil. These children die very quickly, usually within six to twelve hours, of a rapidly fatal bronchopneumonia, clinically characterized by extreme dyspnea and extreme cyanosis.

Waring³ surveyed the literature on this subject in 1933 and noted that only seven fatal cases had been reported in children. He had nine cases of his own, only two of which recovered. Animal experimentation confirms the fact that kerosene poisoning is serious and fatal, due to a rapidly developing pneumonitis with edema of the lung. This same phenomena was seen in many cases of war gas poisoning, particularly with phosgene. To my knowledge no regime of therapy is effective in these cases, and the amount of oil which must be aspirated to produce death is also uncertain. It would seem, however, that immediate postural drainage, literally hanging the child by his heels, might lessen some of the pulmonary irritation. I mention this type of pneumonia because kerosene is such a common household article and mothers are negligent in leaving the coal oil can accessible to some toddling child.

The physician must not lose sight of the fact that the primary tuberculous infection of childhood may occur at any age in childhood, and if it does occur before the age of two or three years may be quite fulminating and often exhibit the clinical picture of a typical pneumonia. Pneumococcic infections may produce hilar shadows by x-ray similar to those commonly seen in the primary tuberculosis of childhood. The physician is aided in differentiating these two conditions by the fact that hilar shadows due to pneumococcic infections clear more quickly than those due to tuberculosis. The reaction to tuberculin, the history of possible home contacts or an investigation of the sputum, stools or guinea pig inoculation for positive evidences of tuberculosis should serve further to differentiate tuberculous infections from pneumococcic. In my experience the x-ray is valuable in giving further evidence of the probable tuberculous origin of the lung infection. Prognosis of many of these cases is very bad, particularly if the age is quite low, and a high percentage of them will succumb to a generalized tuberculous infection in six to nine months following the primary tuberculous complex. I have learned to suspect a possible tuberculous etiology in many of my pneumonias that present variable convalescence. The Mantoux will usually serve to clarify this question.

Several investigators⁴ have recently noted that some allergic children may present a pulmonary

infection similar to bronchopneumonia, apparently arising as a result of a severe asthma with a superimposed infection in the lung. The evidence suggesting an allergy as a basis for this entire picture is based upon the fact that these cases usually run a very short duration with a relatively low white blood count plus marked asthmatic symptoms and are improved by adrenalin and warm air.

The foregoing various classifications, I feel, will cover practically all of the cases of pneumonias in children which any practitioner may encounter. I feel, however, that today no diagnosis of pneumonia is complete unless the physician can state the character of the pneumonia and the type of etiologic agent producing it.

Pneumonia is one of the many diseases of childhood which places a great responsibility upon the shoulders of the attending physician from the standpoint of accuracy of diagnosis. The parents want to know at once whether or not the child has pneumonia, because this disease still strikes terror in the heart of every parent. To be able to arrive at the settlement of such a question the physician must consider many possible diseases in differential diagnosis. The clinical findings, physical signs, and x-ray may all be necessary at times to establish the diagnosis of a pneumonic process, but the incident bacterial cause can be known only by bacteriologic methods. The complete working diagnosis of pneumonia demands knowledge of the organism producing the disease. This is obtained by sputum studies—even a single examination of a stained smear will often yield all the information needed. I feel that any child, ill with pneumonia, should be submitted to the following investigative procedures: 1. A complete blood count; 2. A blood culture; 3. An x-ray of the chest; and 4. Sputum examination for bacteria, and for typing, if pneumococci are in evidence. Special culture of the material obtained on a laryngeal or nasopharyngeal swab will be necessary if few or no pneumococci are evidenced by direct examination.

TYPING

There are several important reasons for typing the sputum of any child who has a pneumonia:

1. Determination of the specific type of pneumococcus present is a prerequisite for the use of a specific antiserum and should be done before the administration of sulphapyridine, since this drug may cause a loss of type specificity and

would leave one uncertain as to the type of serum therapy desirable.

2. Knowledge of the type is an aid in establishing a prognosis for the parents.

3. Knowledge of the type presupposes the development of certain complications, i.e., Type I or II is associated with empyema.

TECHNIQUE OF TYPING

It is well here to make a few remarks as to the means of obtaining sputum or material for typing. Many men seem hesitant to try typing the sputum of a child because they consider the obtaining of such a specimen as quite a difficult task. There are several ways one may obtain the needed specimen, the ordinary method, of course, being that of having the child expectorate in a container, but this is exceedingly difficult in young children who swallow their secretions. In these children very frequently a specimen can be obtained by the use of a laryngeal swab or by gently tickling the posterior pharynx and inducing an attack of coughing. A pharyngeal swab may be taken and inserted in broth for four hours and then the smear searched for organisms, and, if pneumococci are found, the Neufeld method of ascertaining the type is carried out. If none are found, a mouse may be injected and in two or three hours the peritoneal fluid examined. Another method of considerable value in small children is that of examining the gastric contents, which frequently reveals the causative organism due to the fact that the secretions are swallowed. In some clinics the method of lung suction is employed, whereby some plasma broth is inserted in a syringe and then the procedure carried out like an ordinary thoracentesis with actual lung puncture. This procedure has always seemed to me as being an unnecessary one, particularly in children. Frequently one can use the pus obtained from an empyema for typing, and, of course, the growth obtained on a positive blood culture is exceedingly valuable for such purpose. However, one hates to wait twenty-four to forty-eight hours for any growth on blood cultures.

Distinguishing of the type of organism has to do particularly with very recent work dealing with typing of pneumococci. As previously stated, it is true that 85% to 90% of the pneumonias of childhood are due to a variety of pneumococci, and antisera have been prepared for most all of these varying types. While it is true

that the majority of work of an outstanding character which would seem to indicate the importance of the typing of the pneumococcus in its relationship to mortality and treatment has been done in the field of adult pneumonia, recent work is indicative that certain types of pneumococci are particularly important in the pneumonias of childhood. Bullowa and Greenbaum⁵ studied the age distribution and mortality for the thirty-two types of pneumococci in 539 cases of pneumonia in infants and children from 1928 to 1934.

I have compiled the following chart from their studies:

539 Non-Serum Treated Cases	Type XIV	Type VI	Type XIX	Type I	Unclassified	Mortality
Under 2 yrs.	18%			5%	70 in entire 539 cases, or 13%	16% Lobar
151 Lobar	15%	13%	7.3%	23%		34% Broncho.
262 111 Broncho.	Mortality			Mortality	15 cases or 3% of total, 539 cases had multiple infections	25%
2-12 yrs.	13%	8%	3%	24%		
235 Lobar	15%			4.6%		6% Lobar
277 42 Broncho.	Mortality			Mortality		14% Broncho.

They felt that Type XIV, which occurred so commonly in infants, had a particular preference and tendency to involve the plenra, meninges and pericardium with greater frequency than many of the other types of pneumococci. Antisera seemed valuable in combating this type of pneumonia in young infants.

These investigators further studied their cases with regard to the importance of the age of the patient and the type of pneumonia on mortality.

They confirmed the old idea that bronchopneumonia is at least two or three times as fatal as lobar pneumonia, regardless of the age of the child. They further showed that under the age of two years any type of pneumonia is between two and three times as fatal as it is over the age of two years. To state exactly, their figures showed a mortality rate of 16% in the cases of lobar pneumonia in infants and only 6% mortality rate in lobar pneumonia in older children, while bronchopneumonia in infants showed a mortality rate of 34% and in older children, 14%. Their observations on mortality in relation to the type of pneumococcus were interesting and confirmed the opinion that the mortality rate was usually much higher for the same type of infection in infants under two years of age than over two. For example, Type I pneumonias under two years showed a mortality of 23%, while Type I infections over two years of age showed a mortality rate of only 4½%.

Type XIV carries about a 15% mortality rate in both old and young children.

Comparison of Common Types in Primary Pneumonias in Infants and Adults: (Bullowa and Coworkers) ⁵				
Infants under 2 yrs.....	XIV	VI	XIX	I
Adults	1	111	11	V
Incidence of Bacteremia	Adults	23%		Mortality
	Infants	7%		75%
	Children	4%		83%
Average mortality for main types	Adults	27%		25%
	Infants	16%		
(Non-serum treated cases)	Children	4.6%		

INDICATIONS FOR USE OF SPECIFIC SERA

Finding a type specific infection associated with a positive blood culture, I feel one must

use an antiserum regardless of the general well-being of the patient. The greater availability and the ease of typing has done much to enhance the more general use of sera. One may use the argument that lobar pneumonia in older children carries with it such a low mortality rate that it is not worth while trying to type the organism and give serum, and, while that statement is true, I feel that it is indeed a risky and unwise frame of mind to always follow such an attitude. Any method of treatment which will further reduce the low mortality is certainly worth while to employ. The physician feels much more confident if he has the knowledge that he is dealing with a certain specific type of pneumonia for which he has, at his wish, a highly valuable combative agent in the form of antisera. If the patient is extremely ill, with considerable cyanosis and a very rapid pulse and a type specific infection, regardless of the absence of a positive blood culture, certainly one is wise in considering the use of serum, regardless of the low mortality rate for the older age group of children. Specific serum should also be administered in those cases failing to respond to sulphapyridine in the usual manner after thirty-six hours of adequate therapy with that drug.

I think that probably every child with a Type II pneumonia should receive serum and even in greater quantities than we would use in Type I infections. We know that Type II pneumococci

invade the blood stream more frequently, and in any of the bacteremic cases of whatever type, the death rate is always high, whereas in non-bacteremic cases it is usually low. Usually the blood stream is invaded between the third and fourth days in Types I and II, but it may be invaded late in the disease.

There are certain requisites, however, which we must bear in mind to obviate the most favorable use of sera. Early treatment is exceedingly advisable, and by early we mean treatment within the first twenty-four to thirty-six hours. Cecil⁷ has shown that with Type I infections the mortality rate is only about 5% if serum is given adequately within the first twenty-four hours, which is about one-sixth of the usual death rate if the patient is not treated. Secondly, the amount of serum per dose should be adequate, usually from 100,000 to 200,000 units in a given case, but a greater amount should be given in those severely ill or those with septicemia. It is further wise to permit only a short interval of two to four hours between the administration of serum dosages. We must not forget that it is never too late to treat a patient with serum, particularly if that patient still shows a positive blood culture.

REASON FOR FAILURE OF SERUM

In some cases the severity of infection and the presence of complications may be too great at the time the serum is given for favorable results. The presence of empyema greatly lessens the influence of serum because its presence no doubt is evidence of an overwhelming infection early in the disease. If there has been a mistake in typing, naturally one would not expect valuable results from serum, and we find patients who probably because of the overwhelming nature of their infection react poorly as far as their hematologic response is concerned, and exhibit a leukopenia throughout the infection and incidentally a very high mortality rate. The late usage with insufficient dosage is also a common fault. The rare occurrence of severe allergic manifestations may at times necessitate no further usage of serum.

Giving too little serum is folly and wastes not only life but serum. We must not adhere strictly to the common idea that serum does no good after the first three days, because it may do good at any time, particularly if a bacteremia is still

present. The longer one waits in giving serum, the greater the expense to the patient, because the greater amount of serum will be required. There is only about one chance in three hundred for a severe serum reaction, and one in four for death without.

Recently commercial companies have begun the production of rabbit serum in the treatment of pneumonia. The chief advantage of the rabbit serum seems to be that it is considered cheaper than horse serum and a very high titer can be obtained, especially for Type III and for types against which it has been impossible to prepare potent horse sera. The chief objection to it seems to be that chills occur with considerable frequency after its use. It has been found that giving patients aspirin just before the serum is administered will frequently lessen the severity and duration of the chill.

TRANSFUSIONS

There is only one other point which I wish to discuss in the treatment of pneumonia in childhood, other than what has already been said about the use of specific antisera, and that has to do with the administration of transfusions in cases of pneumonia. It is no doubt true that in the usual case of pneumonia, blood transfusions are not indicated. However, in many of the smaller children which one sees in a general pediatric service, particularly in the poorer class of people where standards of nutrition have not been adequately maintained, one frequently notes the association of marked anemia. In these conditions, it has long been my practice to give transfusions, and also in certain cases of pneumococcal pneumonia which are alarmingly toxic or in shock. I have further used transfusions in those cases of so-called unresolved or chronic pneumonias of long duration. In these cases the results obtained are often striking. There used to be an old idea that any administration of intravenous fluids was dangerous in pneumonia for fear of overloading a myocardium which was probably already overtaxed by the accompanying pneumonia. Physiology, however, does not confirm the fact that the heart can be easily overtaxed. Normal dogs have been given 25% to 100% of their total blood volume with no increase in the diastolic size of the heart. The capillaries and venules act as reservoirs for this excess fluid, Arena,⁸ writing

from Duke University, recently reviewed their experience with transfusions given to pneumonia patients whether anemia was present or not. They observed twenty-four cases, using twenty-five for controls. The blood studies were about the same in each series. In fifteen cases the temperature fell by crisis within twenty-four hours, and the disease seemed to be definitely shortened in all cases by about two days. The severe dyspnea and cyanosis were often improved and the mortality rate was also lowered. The reasons for improvement in such cases seem uncertain. The improvement is not merely due to lessening of the anemia. It may be true that blood so given stimulates the production of segmented polymorphonuclear cells. Hemogram studies in their cases showed an increase in segmented cells and a decrease in non-segmented forms at the time of crisis. It is, of course, probably true that with the blood one introduces neutralizing antibodies of some non-specific protein reaction.

SULFAPYRIDINE

Present reports in the literature seem to indicate that we are at the dawn of a new era in the treatment of pneumococcic infections in general. This optimism is possible because of the development of a derivative of sulfanilamide, namely, sulfapyridine, commonly known as M and B 693, or Dagenan, proposed by the British chemist, Whitby⁹ in May, 1938. Flippin and Pepper¹⁰ were the first in America to report on the use of this drug in pneumonia, using it in four adult cases of pneumococcic origin, all of which recovered promptly. They¹¹ have since reported its use in one hundred typed cases of pneumococcic pneumonia, nearly all of which were adults, with only four deaths, three of which were Type III infections. There were no deaths in twenty-six cases of Type I infection. Hartmann¹² and his associates at the St. Louis Children's Hospital have reported the most extensive use of the drug in the pneumonias of childhood. Eighty cases of different types of pneumococcic infections, with forty cases definitely proved to be pneumonia, confirmed by x-ray and fluoroscopic examination, a few complicated by empyema and several cases of pneumococcic peritonitis, with three cases of pneumococcic meningitis were included in their report. They carried out studies of the sulfapyridine content of the

blood, blood counts and determination of the methemoglobin in these cases. The most striking observation in the cases of pneumonia was the quick drop of temperature to normal in twenty-four to thirty-six hours in practically every case. Several cases of bronchitis, which were assumed to be of pneumococcic origin, were also dramatically improved. In the instances of pneumococcic peritonitis associated with nephrosis the results were likewise striking. In the total series of forty cases of pneumonia, there were but three fatal cases, two of which were in infants with bronchopneumonia which was proved to not be of pneumococcic origin, and one death in an older child with severe laryngo-tracheitis who died twelve hours after treatment was begun. The types of pneumococci isolated from their cases were I, IV, VI, XI and XIV. Two out of three cases of pneumococcic meningitis recovered. No effect was observed in staphylococcic infections, dysenteries and influential meningitis. These authors felt the favorable reports concerning the use of the drug in adults, should prompt its early use in suspected or proven pneumococcic infections in childhood.

MacColl¹³ at Duke University has recently reported the use of the drug in thirty-three instances in children, thirteen of the cases being pneumococcal infections and all of which recovered completely. The drug was used in eight cases of staphylococcus aureus infection with no particular benefit.

Hodes¹⁴ and coworkers have reported the use of sulfapyridine in seventy-one cases of pneumococcic pneumonias, forty-three of which were of primary origin and thirty-eight cases wherein the pneumonia was associated with measles, all of which recovered. Only patients who showed consolidation by x-ray and identifiable pneumococci from the nasopharynx were studied. Pneumococci were cultured from the blood in only five cases in the series of seventy-one. The clinical response following sulfapyridine was similar in all age groups, and seemed to be as definite in those children with pneumonia associated with measles as in their cases of primary pneumonia. No significant untoward effects were noted except five instances of mild granulocytopenia and two cases of hematuria, with prompt disappearance of much ill effects on cessation of the drug.

The use of sulfapyridine in the treatment of

pneumonia in childhood has further been studied by Wilson¹⁵ and his coworkers in Cincinnati. These investigators studied two groups of children, thirty-five in each group, which were comparable as to age, the duration of pneumonia and its severity at the time of admission, one group receiving sulfapyridine and the other only symptomatic treatment. Only one patient in this series had a positive blood culture. The patients receiving sulfapyridine manifested their clinical improvement late in the second hospital day, while those not receiving the drug had on an average of three to four more days of fever and illness than patients treated with sulfapyridine. They considered their series of cases too small to allow any valuation of the effect of the treatment in preventing complications. Two patients receiving the drug showed no apparent effect, even though adequate blood levels were maintained. In another instance they were unable to note any effect of the drug in a case wherein the blood level of the drug could not be maintained continuously above 2 mg. per 100 cc. Three patients had relapses which responded to subsequent administration of the drug. No severe complications were encountered. These observers feel that a dosage of the drug which secures a level of approximately 4 mg. per 100 cc. of free sulfapyridine in the blood is an adequate dosage. This dosage seems to be maintained by giving 1 to 1½ grains per pound body weight per twenty-four hours.

It is only natural that some derivative of sulfanilamide would be investigated for the combating of pneumococcic infections, since we are all familiar with the marked effect which that drug has upon beta hemolytic streptococci, meningococci and gonococci infections. In fact, several investigators have felt that sulfanilamide itself would act upon the pneumococcus, but that its effect was notably lower than its effect on hemolytic streptococci. I have observed a continuance of the life of a child with pneumococci meningitis beyond the expected period of two or three days by the use of sulfanilamide. Many bacteriologists have noted a marked similarity between the pneumococcus and hemolytic streptococcus, and noted that the immune reaction developing in diseases due to infections by either of these organisms was similar. Therefore, any drug which could be experimentally shown to

elevate the bacteriocidal power of the blood, as well as the bacteriostatic of the serum against the pneumococcus would be expected to bring about a response in the body similar to that seen in cases of hemolytic streptococcus infections treated by sulfanilamide. Sulfapyridine seems to be the drug which is capable of producing just such a response in cases of pneumococci infections.

The mechanism by which the drug works is probably that of being a bacteriostatic agent. We know that recovery from pneumonia depends largely on the development of anti-bodies, particularly at the time of the crisis. Sulfapyridine seems able to inhibit the spread of infection, but if no immunity response develops, there may be a recurrence of symptoms. Herein lies one of the greatest uses of specific anti-sera, the use of which may turn the tide toward recovery, hence it is necessary to know the type specificity of the infecting pneumococcus even when using sulfapyridine. The drug presents certain advantages over serum therapy in that its use lessens the necessity for typing and the identification of the organism, and thereby may spare the patient from the discomfort of procedure necessary in obtaining material for typing. Valuable time may also be lost by waiting to inaugurate therapy while one ascertains the specific type of pneumococcus. More than one type may be present, which confuses one as to the type of serum to use. I feel, however, that one should not adopt the policy of failing to investigate the sputum of the child who has pneumonia just because one is using sulfapyridine. Organisms other than the pneumococcus cause pneumonia, and in most of these instances sulfapyridine would probably not be of any value. The use of the drug also eliminates the risk attached to serum therapy and, furthermore, it affords the child rest when needed most because of the simplicity with which it can be administered. All of these disadvantages are overcome by the use of sulfapyridine.

Unfortunately, there are a few dangers attendant to the use of this drug, most of which seem to be rather insignificant, however, as far as its usage is concerned in childhood. Probably the commonest reaction noted is that of nausea and vomiting, but the newer use of the drug by rectum will probably lessen that phenomena. Cyanosis may be quite evident, but rarely is sufficiently important to necessitate stoppage of

the drug. If one is interested in knowing whether the cyanosis is due to the drug or to pulmonary or cardiac involvement, the intravenous use of methylene blue will aid in such differentiation, the cyanosis being lessened thereby if due to the drug. Like any drug which contains an amine radical attached to the benzene ring, we must watch for the toxic effects on the blood and blood-forming organs, the usual developments being either a hemolytic anemia or agranulocytosis. Both of these developments, however, seem to have been exceedingly rare in the cases reported to date. Hematuria may also occasionally occur.

Enthusied by these reports, the author has administered the drug to fifteen children in the past three months, all of which were pneumococcal pneumonias, clinically and by x-ray, with type specific sputum. The response has been dramatic in each instance and no deaths resulted nor any complications. The drug was given by mouth, crushed in milk or fruit juice, in dosages of .2 gram per kilogram. There were no noticeable reactions and little or no vomiting. Cyanosis of a mild degree developed in several cases, but in no instance requiring methylene blue intravenously. No skin rashes or blood changes were noted.

I feel that if no improvement occurs within thirty-six to forty-eight hours, one must consider such a definite non-response to the drug as indicative of other etiology, or overwhelming infection, or failure of proper blood concentration. The advisability of using anti-serum in a proven type specific pneumococcal infection exists in such instances. Certainly, this drug seems to hold promise of being the most notable achievement of our therapeutic armamentarium for pneumonia. Its complete field of clinical usefulness remains to be seen. It may be that the eventual recommended treatment will consist of a combination of this drug and a specific serum. We must not lose sight of the fact that most therapeutic discoveries are originally hailed with enthusiasm and may later be followed into discard. We must remember also that the use of specific serum has given consistently, favorable clinical results in pneumonia when administered in good hands. There are so many factors which alter the end-result in a disease-like pneumonia that it will necessitate the observation of thousands of carefully controlled cases with particu-

lar study as to comparative etiology, clinical types, bacteremia and seasonal virulence of the infecting agent before we can completely evaluate the clinical worth of this new therapeutic agent. Careful analysis of most of the reported series of childhood pneumonias treated with the drug shows a rather striking low incidence of bacteremia or complications, with practically no mortality in cases treated the past year with or without the drug. This would seem to indicate that our current pneumonia season was not a virulent one. It is my own feeling, however, that we are at the threshold of a new era in the successful treatment of pneumococcal infections, not only in children and infants, but in adults as well.

To me, the final outcome in any given case of pneumonia in childhood depends in its last analysis upon the age of the child, the type of infecting organism, the clinical type of pneumonia produced, the presence or absence of positive blood cultures, the body response as shown by the leucocytic picture, and the ability of the clinician to detect early and treat rationally any of the complications having already initiated a carefully supervised administration of sulfapyridine in the pneumococcal and streptococcal types, but remaining ready to use and always mindful of the potential value of specific antisera in those pneumococcal pneumonias not responding in the accepted fashion after the preliminary use of sulfapyridine.

1416 Maine Street.

BIBLIOGRAPHY

1. Trask, James D., *Practice of Pediatrics*, W. F. Prior & Co., 1936, 2: Ch. 48.
2. Laughlin, G. F.: *Pneumonia Following Nasopharyngeal Injections of Oil*, *American Journal Path.* 1: 407, 1925.
3. Waring, J. O.: *American Journal of Medical Sciences*, March, 1933.
4. Waldhott, G L., and Snell, A. D.: *Journal of Pediatrics* 6: 229, 1935.
5. Bullowa, J. G., and Greenbaum, E.: *American Journal of Diseases of Children* 53: 22, 1937.
6. Bullowa, Jose, and Gleich, Morris: *American Journal of Medical Sciences* 196: Nov. 1938.
7. Cecil, Russel L.: *Journal of American Medical Association*, 108: February 27, 1937.
8. Arena, Jay: *American Journal of Diseases of Children* 54: 23, 1937.
9. Whitby, L. E. A.: *Lancet* 1: 210, 1938.
10. Flippin, H. F., and Pepper, D. S.: *American Journal of Medical Sciences* 196: Oct. 1938.

11. Flippin, H. F.; Lockwood, John S.; Pepper, D. S., and Schwartz, L.: *Journal of American Medical Association* 112: Feb 11, 1939

12. Barnett, H. L.; Hartmann, A. F.; Perley, Anne, and Ruhoff, M. B.: *Journal of American Medical Association* 112: Feb. 11, 1939.

13. MacColl, W. A.: *Journal of Pediatrics* 14: March, 1939.

14. Hodes, H. L.; Stifler, W. C.; Walker, Ethel; McCarty, Maclyron, and Shirley, Robert G.: *Journal of Pediatrics* 24: April, 1939.

15. Wilson, A. T.; Spreen, A. H.; Cooper, M. L.; Stevenson, Frank E.; Cullen, Glenn E., and Mitchell, A. Graeme: *Journal of American Medical Association* 112: April 15, 1939.

Dr. Douglas Boyd (Highland Park): Are any fatalities reported from the use of sulfapyridine?

Dr. William C. Fox, Chicago: I would like to ask Dr. Whitaker whether he thinks the failure to type pneumococci, after the use of sulfapyridine treatment, may not be the result of the static effect of sulfapyridine.

Dr. Whitaker (Closing the discussion): In regard to the question as to whether there have been any fatalities following the use of sulfapyridine, I can only answer from my knowledge of the use of this drug in cases of pneumococcal infections in children.

Dr. Hartmann of St. Louis reported one of the earliest series in this country, using the drug in some eighty cases of pneumococcal infection, including about forty cases all of which were children with definite pneumococcal pneumonia, two or three instances of pneumococcal meningitis, and also in several cases of nephrosis associated with peritonitis with recovery. In this particular study, there was one instance of severe granulocytopenia, which was, however, associated with a septic process and there was an improvement in the blood picture following cessation of the drug, although the child died apparently from the septic complication. To my knowledge, I have encountered no case in pediatric literature wherein the death was directly attributable to the use of the drug. I think all of us agree that with the ordinary precaution of watching the blood count every two or three days, severe or fatal granulocytopenia is not likely to occur.

In regard to the question about the loss of type specificity, it has been my experience to observe it in one or two instances. Many investigators have reported it as happening. The action of the drug seems to definitely decrease the growth or multiplication of the pneumococcus by its bacteriostatic effect. We know that the type specificity of the pneumococcus depends upon the capsular substances, and sulfapyridine seems to alter this portion of the organism, thereby making possible a loss of type specificity. Naturally, if the organism is still cultured from the blood stream after the use of the drug, being in pure culture and probably in excessive numbers, I think it is quite likely, as mentioned by one of the discussants, that type specificity would not be lost. It may be that the difficulty in detecting the type in the sputum after the use of the drug is due to an actual decrease in the number of organisms present.

DISSEMINATION AND CONTROL OF BACILLARY DYSENTERY*

LOUIS H. BLOCK, M.D.**

CHICAGO

and

ALEXANDER TARNOWSKI, M.D.

DIXON, ILLINOIS

and

BERNARD L. GREENE, M.D.

ELGIN, ILLINOIS

Bacillary dysentery presents a far more serious problem at present than typhoid fever and, because of characteristics peculiar to the disease, its epidemiology is less susceptible to proof. Flexner and Sweet¹ in 1906 demonstrated the course pursued in the absorption of the toxin, excretion through the wall of the large bowel, reabsorption and the function performed by the liver and bile in the maintenance of this vicious circle. In feeding experiments upon rhesus monkeys, Preston and Clark² in 1938 succeeded in producing a typical bacillary syndrome bacteriologically, pathologically, and clinically analogous to that of the human.

Since 1922 animal experiments in epidemiology have been carried out by English and American investigators.³ Among their conclusions the following are worthy of comment:

1st: A steady circulation of susceptibles is a more powerful factor in favoring the epidemic spread of disease than the total number of animals exposed.

2nd: There is no tangible evidence of change in the virulence of the organism in the pre-epidemic, post-epidemic or inter-epidemic periods.

3rd: Epidemic strains tend to kill but not to persist in survivors or spread to contacts; but endemic strains may exhibit the reverse behavior.

4th: The dosage of pathogenic organisms may affect the severity of attack.

It is apparent that bacillary dysentery is produced by the ingestion of the organism and in the human is a hand-to-mouth phenomenon. Because of conditions exacted in an animal study

*From the State Department of Public Welfare, the Proctological Service, Elgin and Dixon State Hospitals, University of Illinois, Department of Bacteriology and Public Health, and the Research Laboratories of the State Department of Public Health, Chicago.

**Consultant Proctologist, Elgin, Dixon and Chicago State Hospitals.

Read before Section on Public Health & Hygiene of Ill. State Med. Soc., May 3, 1939, Rockford.

the results are not comparable to a human epidemic. Variable human and physical factors in a community strongly influence the trend of epidemic bacillary disease. Due to difficulties in bacteriological technic marked discrepancy exists, so that accurate evaluation of the factors implicated in the development and termination of an epidemic is almost impossible.

Deductions in most instances must be presumptive and based on the sequence of events in the spread of disease. Conclusive evidence, in which cause and effect can be unequivocally proved and attributed to one common source and organism, is very uncommon in bacillary dysentery.

FACTORS INVOLVED IN DISSEMINATION

Incidence: Shiga⁴ hoped the dysentery problem would be solved soon after his discovery of the organism (1898), which led to immediate adoption of public health measures for its control and eradication. The reduction in the incidence of the Shiga type of dysentery in Japan was followed by an increase in the prevalence of "meta" and "para" dysentery. The literature is replete with reports of epidemics of bacillary dysentery from all parts of the world and practically every section of the United States. A number pertain to epidemics of enteric disease of unknown etiology, although some form of dysentery was usually suspected. Boardman⁵ states that from a physician's standpoint it is certainly a challenge to modern medicine that a condition approaching epidemic proportions is so frequently unexplained. Carter⁶ concurs with Matt and Durham, who emphasized the difficulties in recognizing bacillary dysentery because of the mildness of symptoms and its rarity as a result of sanitation. Despite investigations which have shown conclusively that the disease is neither rare nor always mild, this same opinion is held today by many physicians. Many cases, especially the symptomless or mild, remain undiagnosed. Add to this factor, modern means of transportation plus constant shifting of the population and the result is a widespread incidence in endemic or epidemic form.

Carriers: The organisms of bacillary dysentery are excreted in feces, though it is interesting to note that the organism has been recovered in blood culture by Haynes⁷ and from bile at autopsy by Nichols.⁸

A simple classification of carriers as convalescent, chronic and symptomless or contact types is descriptive. In this connection, we must include the food handler because of his pertinent relationship to the entire problem of dissemination. He may be found in any one of the three groups and can easily become the vital factor producing an explosive outbreak in any endemic environment. Gay⁹ states that carriers of this disease have not been as systematically investigated as carriers of the typhoid bacillus, but is certain that so-called healthy carriers exist, as well as recovered ones. Felsen¹⁰ does not believe there are any healthy carriers. In our series four such carriers, including one employee, were found on bacteriologic examination. They all denied ever having had an attack of diarrhea and never presented any symptoms or findings on repeated sigmoidoscopic examinations during a protracted period of isolation in the dysentery ward.

In an intensive cultural study of 44 cases at the Dixon State Hospital, including acute, chronic and convalescent patients, 28.04% were found to be harboring *Shigella* organisms. The duration of illness in this series of positive cases varied from 1 day to 11 months and in one case was unknown. One patient had had diarrhea for two months at a time five years previous to examination; subsequently she had been without symptoms, but proctologic examination revealed positive findings. A control study of supposedly healthy patients showed an incidence of 5.4% positive cases. Employees in a representative group studied appeared to be singularly free from organisms; but we considered it expedient to isolate five, who disclosed proctologic findings of acute or chronic dysentery. It seems logical to regard every case of dysentery a possible carrier in any stage of the disease.

Carriers may be found in any community, but particularly in institutions because of new admissions. Only cultural findings reveal the healthy (contact) carriers if, and when, the organisms can be recovered. Proctoscopic examinations are more reliable than negative bacteriologic findings in the detection of chronic and convalescent, so-called obvious carriers. Routine proctologic examinations of all patients on admission to the Dixon State Hospital from January, 1937, to January, 1939, led to immediate isolation of 3.4%. Similarly, 0.8% were isolated on admis-

sion to Elgin State Hospital. It is to be emphasized that as a source of infection these patients had been as great a menace to the community from which they originated as they are now to the institution.

In our experience in endemic and epidemic periods, carriers become an issue only when other corresponding agents in dissemination are not controlled. Conversely they may become obstacles to complete eradication of bacillary dysentery.

Modes of Transmission: Dysentery organisms can be conveyed by innumerable means through devious paths to any part of a community, home or institution. We have compiled eighteen possibilities of transmission, divided into three groups in order of their importance in dissemination. Many were disclosed in the course of our surveys at the institutions, though not actually proved.

Proved Means	Suspicious Means
Milk	Food containers
Water	Utensils
Food	Swimming pools
Defective Plumbing	Soil
Ice	Domestic animals
Flies	Rats
Fomites	Vermín
Contributing Causes	
Overcrowding	
Uncleanliness	
Climatic conditions	
Geographical locations	

Means of transmission can be considered proved only if there is conclusive evidence of contamination or pollution with organisms identical with those recovered from patients. Bowes,¹¹ Fyfe¹² and Wiseman¹³ report proof of milk-borne epidemics; Carter⁶ traced one to ice cream; Stanley et al.¹⁴ to bread; Singer¹⁵ to ice; and Gibbons¹⁶ to flies. Miller¹⁷ was so impressed by the rapidity with which an epidemic spread that he was tempted to believe it was actually "air-borne." Boardman⁵ considers defective plumbing an extreme hazard and even modern installations often undependable. McDaniels, Burton and Arnold¹⁸ reported an outbreak of amebic dysentery directly traceable to lack of siphon breakers in "flush-o-meter" valve type of toilets. In a nursery building in one of our institutions we demonstrated back siphonage in the same type of plumbing. Another possible source of contamination is the custom, recently discovered, of preparing feedings in the nursery kitchen for

children in the isolation ward and transporting bottles back and forth for that purpose. Russell, in discussing Shiga's⁴ paper, stated that we must come to a realization that the prevention and eradication of enteric diseases are in part matters of sanitary engineering.

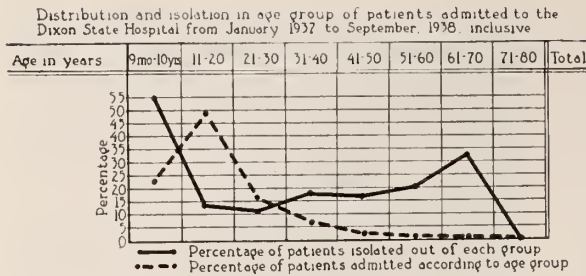
Susceptible Hosts: Infection in any disease depends upon the balance between the virulence of an organism and the resistance of a host. Age and physical condition exert a decided influence upon the susceptibility of an individual to bacillary dysentery.

In an analysis of 231 cases observed at Dixon State Hospital among the 1,017 patients admitted from January, 1937, to September, 1938, very distinct comparisons can be made in susceptibility of various age groups. (See Table and Chart No. 1.) This chart depicts the high

TABLE 1
Distribution and Isolation in Age Groups of Patients Admitted to the Dixon State Hospital from January, 1937, to September, 1938, Inclusive

Age, in Years	Number Admitted	Per Cent.	
		Total Admissions	Number Isolated
9 mos.-			
10 yrs.	229	22.51	126
11-20	491	48.27	73
21-30	153	15.04	18
31-40	79	7.76	15
41-50	37	3.63	6
51-60	20	1.96	4
61-70	6	0.59	2
71-80	2	0.19	0
Total	1017		244

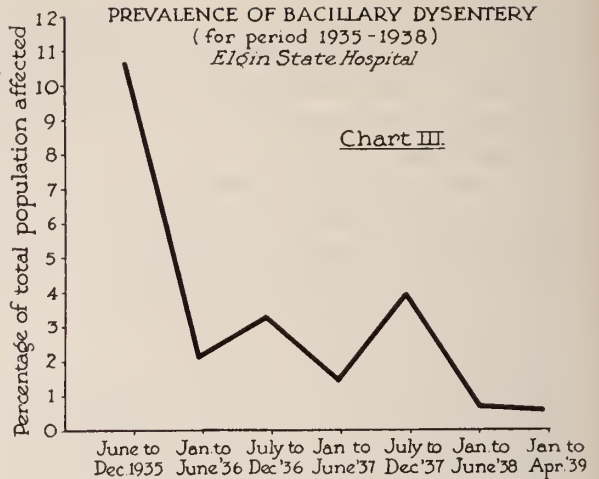
incidence in the 1-10 year age group; a sudden drop, with the 21-30 year period as the most resistant, and a gradual rise to a point, in the 61-70 year group, almost equal to the previous peak. The susceptibility in the tender age is exceedingly high and distinctly out of proportion to the number of susceptible hosts in other age groups. Infants and children are particularly susceptible because of lack of resistance as well as lack of anatomical differences between the large and small bowel. The percentage of susceptible hosts appears not to be the determining factor in the incidence in institutions, since the admissions maintain a continuous supply of susceptibles. Despite this, it is possible to prevent the development of new cases even in the presence of carriers. Individual disposition plays a significant role in the response of those exposed to infection. This is clearly indicated by the number of individuals in the various groups who have not become afflicted, even though subject



to the same possibilities of infection. There is no doubt that natural ability to ward off disease exists, but it is probably controlled by external and internal agencies. Natural or acquired immunity, physical and mental development, diet and care received prior to admission, etc., partially explain the phenomenon. Certainly, the large percentage of cases, which recur from time to time, frequently in the same individuals suggests that immunity when acquired is only transient and that the individual either contracts the disease anew or that a latent source of infection in the bowel or gall bladder becomes active.

Mechanism of Dissemination: Even in typhoid fever many possible means of transmission cannot be proved bacteriologically, but by inference and experience we recognize their potential danger. Utilizing the same presumptive evidence and basing our deduction on experience in two large epidemics in two different institutions, we suggest that three correlated factors are implicated in dissemination:

1. The source; any individual who harbors and excretes dysentery organisms, including acute, convalescent and chronic cases and healthy car-



riers. Food handlers must always be borne in mind.

2. The avenues of transmission; any possibility, either proved or suspicious.

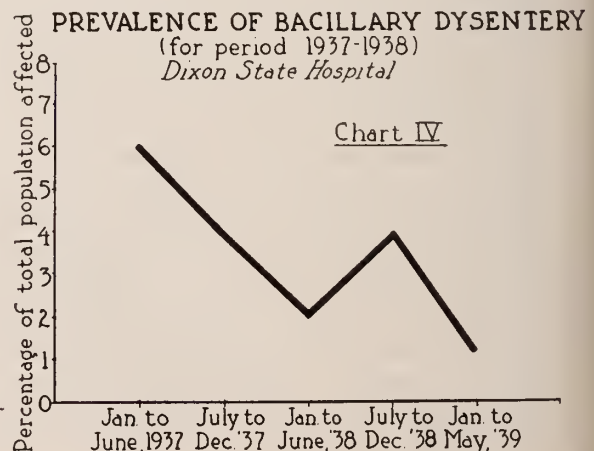
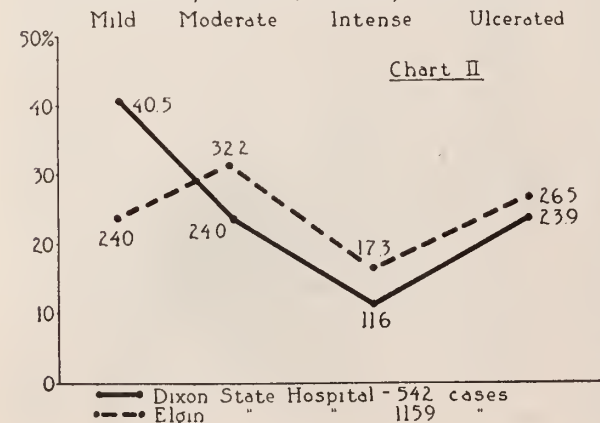
3. The available host; one whose susceptibility is influenced by many intrinsic and extrinsic factors.

Whether the incidence of disease will be of sporadic, endemic, pre-epidemic or epidemic proportions will be determined by the predominating factor:

1. When the source is limited to one acute case or chronic carrier in a restricted environment and the susceptible host becomes infected by direct contact through a single medium of transmission, the likely result is a sporadic case.

2. If the source is multiple and the means of transmission limited, but direct contact with a number of susceptible hosts is possible, endemic cases appear.

The four types of mucosal involvement observed in bacillary dysentery in Dixon and Elgin State Hospitals and a comparative percentage of each



3. With the same limited means of transmission but with the source in widespread foci and therefore available by direct contact to a greater number of susceptible hosts, a pre-epidemic state occurs.

4. If the foci are numerous and widespread, and the means of transmission increased, there will be contact with a greater number of susceptible hosts, many previously unexposed, and an epidemic results.

5. If to this triad is added a means of rapid distribution through some commonly used medium, such as milk, water, food, ice, etc., an explosive outbreak develops.

Diagnosis: Bacteriology. This constitutes the crux of the entire problem. An accurate diagnosis can be made only by recovering the etiologic organisms from the stool. But this seems often to be impossible. From an epidemiologic and bacteriologic point of view much remains to be elucidated; the dysentery organisms *in vivo* and *in vitro* appear unusually susceptible even to slight changes in environment. Arnold¹⁹ aptly describes them as being a very unstable and undifferentiated group subject to alteration in morphology, biochemical relation, antigenicity and toxicity. Shiga⁴ mentions as many as 100 different strains, Silverman²⁰ 45 strains, etc. Martin²¹ claims the organisms will survive outside of the body and in ice, although easily killed by heat and sunlight; and may survive drying for ten weeks, live in feces 11 days, fomites 49 days and soil one year. Blatt²² has recovered the organisms from mucus as long as a year later. In the experience of our bacteriologists and others the organism has failed to survive even for brief periods outside the body. A negative bacteriologic examination, therefore, lacks significance because of the intermittent excretion of the organisms and technical problems involved in transportation of specimens and isolation of the organism.

This accounts for the discrepancy obtained in three bacteriologic surveys performed at Dixon and at Elgin State Hospitals. These bacteriologic studies were conducted by the research laboratories of the University of Illinois, the State Department of Public Health and the U. S. Public Health Service. A brief résumé of results may be of some interest.

In the former institution the three studies were performed at three different periods of

time. The first consisted of cultural studies made on 2897 proctoscopic swabs from newly admitted patients, employees, food handlers, diarrhea suspects, acute and chronic cases. Only eighteen positive cultures for *Shigella dysentery*, Flexner, were obtained or 0.7%. Specimens taken from 276 patients in isolation yielded only 6.2% positive cultures. A lapse of 24 hours between the collection and the plating of the specimens unquestionably accounts for the small number of positives.

The second study, performed on the premises, on representative portions of the same group, yielded strikingly different results, with 28.5% positive for *Shigella dysentery*, Flexner type. Another interesting feature of this study is that 46.4% were positive on the first stool examination, 21.4% on the second, and 57.1% on the third. Only one was positive on all three stool cultures and only five on two. A control study of supposedly healthy but apparently contact cases showed an incidence of 5.4%.

The third study, also performed on the premises, and on the same type and group of patients and employees, culminated in the isolation from eight patients of an atypical Flexner organism, giving agglutination with paratyphoid A and B and a number of strains of dysentery. The opinion is that it is an organism which has developed individual characteristics due to its long active life in the Dixon institution.

A similar study consisting exclusively of proctoscopic specimens was made at Elgin State Hospital during three different periods: one epidemic and two post- or inter-epidemic. In two of these studies, where there was a lapse of 24 hours before culturing, only 0.5% were positive. In a recent follow-up study of former dysentery patients the proctoscopic specimens were immediately inoculated on various media. Of the 425 patients thus examined only eight or 1.9% were found to be positive for *Shigella dysentery*, Flexner.

Serology: Agglutination tests on over 3500 blood specimens taken from all groups of patients in the two institutions and a control group of newly admitted patients have convinced us that they cannot be considered diagnostic, regardless of titre. It is simply confirmatory.

Early recognition of the disease is imperative and cannot be accomplished by employing bacteriologic methods exclusively. Considerable

emphasis must then be placed upon sigmoidoscopic examinations and clinical manifestations.

Clinical: There appear to be four distinct types of bacillary dysentery: symptomless, mild, severe and chronic, but it can simulate many other diseases.

Symptomless Type: These patients are usually discovered in routine examinations or surveys and are entirely symptomless except for proctoscopic evidence of dysentery. Some of these patients may be positive culturally and serologically.

Mild Type: The temperature ranges from normal in most instances to 101°. Abdominal cramps and other systemic symptoms are often barely perceptible. The stools may be liquid, with considerable mucus and blood, or they may be well-formed and the patient constipated. Recovery in a few days is common, but death may occur.

Severe Type: The onset is gradual and insidious or very sudden. The symptoms may be severe malaise, headache, pyrexia (sometimes reaching 107°), nausea, vomiting, excruciating abdominal cramps (often simulating peritonitis), tenesmus and diarrhea. Diarrhea is, as a rule, the outstanding symptom, being irritating and exhausting, with evacuations of liquid, bloody and mucoid stools amounting to 40, 50, or more daily. Toxemia and dehydration are marked. This condition may persist for days, weeks or months. The mortality is much higher in this type.

Chronic Type: The symptoms vary from the mild to the severe, with periods of remission in which complete healing may occur. However, the patients may be emaciated, weak, but afebrile, and have intermittent attacks of diarrhea, with a dark, serous, bloody and offensive stool. The majority eventually recover completely, but about 8% (our series) develop a condition analogous to chronic ulcerative colitis.

Felsen¹⁰ classifies the atypical forms into the appendicular, meningitic, agranulocytoid, afebrile, asymptomatic, constipated and Sonne-Duval types.

The systemic symptoms may not correspond at all to the degree of mucosal involvement. The patient may be completely prostrated, but the bowel only mildly affected; or the mucosa may be severely ulcerated and the patient be apparently well.

Rogers and Megaw²³ state that both the gross and microscopic changes in the bowel are quite distinctive in bacillary dysentery. Felsen¹⁰ finds that in the acute stage the recto-sigmoid is always involved, despite the fact that some patients are not cognizant of the disease. Skinner²⁴ concludes that the proctoscopic examination will give an accurate picture of the lesions typical of this disease. We have performed approximately thirteen thousand sigmoidoscopic examinations upon dysentery and non-dysentery cases in two institutions, making comparative studies to determine whether or not bacillary dysentery can be diagnosed by direct visualization. In no other condition involving the rectum and sigmoid, excepting perhaps amebiasis, is the appearance of the mucosa similar to that of bacillary dysentery. Because of the accuracy and efficacy of this new method it is indispensable in the diagnosis, management and control of diarrhea.

We have previously described²⁵ four distinct stages observed sigmoidoscopically, the mild hyperemic, moderate hyperemic, intense hyperemic, and the ulcerated. The latter may be concomitant with any of the other three types. Mild or moderate changes occur early in the disease, may advance no farther, or may gradually progress to the most advanced, even culminating in perforation.

Continuous or repeated infections may produce permanent changes in the bowel wall comparable to our conception of the pathology noted in chronic ulcerative colitis and regional ileitis.

The mild type presents a diffuse hyperemia of the mucosa, which should not be confused with a simple congestion, a condition often observed in the transitional stage. The healing process begins at the distal end of the bowel, the hyperemia at the proximal. In the presence of an unaccounted-for foul liquid stool the patient should be carefully studied for at least 48 hours to determine the nature of the malady.

The moderate type shows diffuse inflammation with the mucosa bright red and edematous and the valves slightly thickened. The stool is liquid and mixed with muco-purulent exudate and occasionally blood streaked. In this type the inflammatory process does not penetrate deeper than the mucosa.

In the intense type, the mucosa is highly inflamed, extremely edematous with areas of petechial hemorrhages. The normal structures

are completely obliterated and the entire wall involved. The stool is liquid, bloody and mucopurulent.

The ulcerated type may appear in any stage of the disease. The lesions vary from pin-point in size to many centimeters in diameter and are usually superficial and covered with a whitish-gray membrane. Or, not infrequently, they may be very deep and penetrating, involving all the coats of the wall and perforating through it. The lumen may be filled with a foul liquid stool mixed with muco-purulent exudate and blood, which sometimes forms a long, thick, dirty gray sheet, tissue-like in consistency. Yet we have frequently observed a formed stool in an ulcerated bowel.

A total of 1701 cases have been observed in two institutions. Note in Chart 2 that there is a slight increase in the prevalence of the mild type at Dixon State Hospital, but the other types appear in about the same proportion in both institutions.

Control: Prophylaxis. Intravenous administration of vaccine freshly prepared from 6-12 strains is considered safe by workers who have used this method on a large scale in a mental hospital in England. Protection is not complete, but there is marked diminution in the number of cases and the severity of the attacks. Oral or rectal vaccines have appeared ineffective in the experience of others and we have had similar results with the former.

Sigmoidoscopy can be easily performed with practically no discomfort on patients of any age or physical condition and requires no anesthetic. It is the logical approach to an early diagnosis and will reveal changes in the bowel mucosa long before any dysentery organisms can be recovered. We make this examination on all patients upon admission, on all cases of diarrhea and on all new employees in the institution. Immediate isolation prevents spread from these sources.

The same precautionary measures adopted for the prevention of typhoid fever should be applied to bacillary dysentery. We have incorporated these fundamentals in our plan, which, even though it may appear formidable, is extremely simple and easily fulfilled. It is as follows:

1. Periodic inspection of the water, milk and food supply.

2. Periodic inspection of plumbing and correction of defects.

3. Control of flies.

4. Thorough disinfection or steaming of all food containers, utensils, glassware and linens.

5. Provision for adequate isolation quarters equipped with a suitable plumbing system and facilities for disinfection or steaming of food containers before their return to the general kitchen. Provision for the disinfection of all utensils and glassware on every ward; for the proper disposal of garbage and for the disinfection of all linens before being sent to the laundry.

6. Sigmoidoscopic, serologic and bacteriologic examination of all food handlers, whether employees or patients, to exclude carriers. Careful supervision, with emphasis upon the need for cleanliness. No food handler afflicted with or recovered from the disease is permitted to work in the culinary department in any capacity.

7. Immediate report and isolation of every case of diarrhea among patients or employees.

8. Routine sigmoidoscopic and, if possible, bacteriologic examination of every patient admitted, and of every case of diarrhea occurring in the institution, and of every new employee added to the staff.

9. Release from isolation only after three negative sigmoidoscopic examinations one week apart and three consecutive negative cultures if previously positive.

Our experience has been limited to a study of a widespread epidemic in two institutions. The results have been rather striking. The prevalence at Elgin State Hospital (Chart III) has been reduced to about 0.1% of the total population. In the Dixon State Hospital the total population has increased during the period under investigation. Therefore, the number of susceptible hosts is greater and, although the various means of transmission are not entirely controlled, the incidence of the disease has been appreciably reduced and the epidemic completely checked. (Chart IV.)

COMMENT

Bacillary dysentery is at present a more serious problem than typhoid fever, since it is more prevalent and disabling, and has a higher mortality rate. Failure to control its spread is due to many reasons:

1. Physicians are indifferent and skeptical because of the absence of a clear clinical picture and the comparative uncertainty of bacteriologic and serologic methods of diagnosis.

2. This lack of confirmatory evidence leads to neglect of many cases and contributes to the spread of the disease.

3. The public has been insufficiently warned of the dangers of this disease and the ease with which it may be contracted from infected individuals and in swimming pools, camps, resorts, etc.

4. There is a tendency to attribute all cases of diarrhea occurring in adults and especially in infants and children to gastroenteritis or food upset.

Bacillary dysentery is not only a problem for the public health officer, but for every physician, proctologist and sanitary engineer.

SUMMARY

1. The incidence of bacillary dysentery is unquestionably greater in institutions and communities than ordinary methods of examination disclose.

2. Several types of carriers are discussed, all of which are a potential source of infection.

3. Dissemination depends on many correlated factors, some subject to proof, others to suspicion. The incidence of the disease incriminates many unproved factors by its direct relationship to them.

4. Despite a constant supply in institutions of susceptible hosts, it is possible to limit bacillary dysentery to sporadic cases, even though carriers may exist.

5. Sigmoidoscopic and confirmatory bacteriologic examinations are urged to aid in the diagnosis of all cases of diarrhea.

6. Control and elimination of bacillary dysentery will be effected largely through early recognition of this disease and the application of sanitary measures.

185 N. Wabash Ave.

DISCUSSION

Dr. Nell Hirschberg, Chicago: I would like to comment on three or four points that Dr. Block made and one which he did not make, I think is important. First of all, regarding the diagnosis of dysentery in children which Dr. Block did not discuss. In a recent study which has not been published 38 known cases of diarrhea in children were examined over a period of two months in the summer time. The first bacteriologic examinations revealed only three positive bacillary dysentery cases, and repeated additional examinations raised this number to 18 positives. Therefore, I want to stress the importance of repeated bacteriologic examinations, even in the absence of perfect cultural methods.

A proctoscopic examination is exceedingly valuable if it aids and abets the weaker diagnostic method of bacteriological examination. The highest incidence of bacteriologic positives which you have seen reported in the literature averages about 12 per cent. It is possible by proctoscopic examination plus bacteriological examination to raise this percentage considerably.

The other point I want to mention is Dr. Block's discussion of the distribution and dissemination of bacillary dysentery which was in his case peculiar to institutions. It is also applicable to a study of dysentery in the general population. I think those of us engaged in public health work will see that the dissemination of bacillary dysentery is really a carrier problem. In this regard I should like to stress one point which he made. If all cases of diarrhea are investigated, and if the general public can be made to see that even simple cases of diarrhea are investigated, the incidence of positive bacillary dysentery cases will be increased, but we will be able to control the problem by isolating these individuals who are now spreading it among our general population.

REFERENCES

1. Flexner, S., and Sweet, J. E.: *J. Expt. Med.*, **8**: 514, 1906.
2. Preston, Wm. S., and Clark, Paul F.: *Jour. of Infectious Diseases*, **63**: 238, 1938.
3. Flexner, S.: *J. Expt. Med.*, **36**: 9, 1922.
4. Topley, W. W. C.: *J. Hyg.*, **19**: 350, 1920-31; *Lancet*, **1**: 477, 531, 645, 1926.
5. Topley, W. W. C., and Wilson, G. S.: *The Principles of Bact. and Immunity*, N. Y.—Wood, **2**: 767, 1929.
6. Greenwood, M., *Epidemiology: Historical and Experimental*, Baltimore, Johns Hopkins Univ. Press, 1932.
7. Webster, L. T.: *Medicine*, **11**: 321, 1932.
8. Neufeld, F.: *Klin. Wochn.*, **8**: 49, 1929.
9. Shiga, Kiyoshi: *New Eng. J. of Med.*, **11**: 1205, 1936.
10. Boardman, W. W.: *Amer. J. of Med. Sciences*, **196**: 833, 1938.
11. Carter, H. S.: *J. of Path. and Bac.*, **45**: 447, 1937.
12. Haynes, Edith: *J. of Infectious Dis.*, **60**: 251, 1937.
13. Nichols, H. J.: *J. Expt. Med.*, **24**: 497, 1916.
14. Gay, F. P., and Associates: *Agents of Dis. & Host Resistance*, 672, 1935.
15. Felsen, J.: *Annals of Int. Med.*, **10**: 645, 1936.
16. Bowes, G. K.: *Brit. Med. Jour.*, **1**: 1092, 1938.
17. Fyfe, G. M.: *J. of Path. and Bac.*, **26**: 271, 1927.
18. Wiseman, W. R.: *Lancet*, **1**: 817, 1927.
19. Stanley, L. L., Garfinkel, F. E., and Goddard, W. R. *J. A. M. A.*, **94**: 857, 1930.
20. Singer, P.: Personal communication.
21. Gibbons, R. J.: *Can. P. H. Jour.*, **28**: 278, 1937.
22. Miller, R.: *Brit. M. J.*, **1**: 64, 1938.
23. McDaniels, H. E.: Burton, E., and Arnold, L.: *Am. J. of Dig. Dis. & Nut.*, **3**: 526, 1936.
24. Arnold, L.: *Ill. Med. Jour.*, **74**: 542, 1938.
25. Silverman, D. N.: *The Cyclopedia of Med.*, **4**: 789, 1934.
26. Martin, J. J. B.: *J. of Ment. Sc.*, **83**: 289, 1937.
27. Blatt, M. L., and Shaw, N. G.: *Arch. of Path.*, **26**: 216, 1938.
28. Rogers and Megaw: *Tropical Medicine*, p. 263.
29. Skinner, R. B.: *Mil. Surg.*, **80**: 201, 1937.
30. Block, L. H., and Simon, A.: *Am. J. of Dig. Dis. & Nut.*, **3**: 305, 1936.
31. Block, L. H., and Greene, B. L.: *Ill. Med. Jour.*, **74**: 542, 1938.
32. Greene, B. L., and Block, L. H.: *Am. J. of Dig. Dis. & Nut.*, **5**: 684, 1938.
33. Block, L. H., Tarnowski, A., and Greene, B. L.: *Am. J. of Dig. Dis. & Nut.*, **6**: 96, 1939.

COLLOIDAL ALUMINUM HYDROXIDE "CONTINUOUS DRIP" IN THE TREAT- MENT OF LARGE GASTRIC ULCERS: THE THERAPEUTIC AND DIAGNOSTIC VALUE OF THIS METHOD

FREDERICK STEIGMANN, M.S., M.D.
CHICAGO

Even though there is unanimous agreement that gastric ulcers present to the clinician a more serious therapeutic problem than do duodenal ulcers, there is no such agreement in regard to the type of treatment of ulcers of the stomach. This divergence of opinion is even more marked in regard to large gastric ulcers, as in these the fear of malignancy frequently prejudices judgment.

It is not within the scope of this brief report to discuss the very complicated and controversial question of the benignity or malignancy of large gastric ulcers. Suffice it to state that after many years' study of large gastric ulcers, we cannot confirm the hypothesis promulgated some years ago, that all gastric ulcers of $2\frac{1}{2}$ cm. or above are malignant. The experience in our clinic has been that the size of the crater does not indicate the nature of the lesion, and that in patients possessing such lesions the so-called differential diagnostic points between a benign and malignant ulcer are usually obliterated or hardly noticeable. Cases in which there is a large niche on the lesser curvature but which show some signs of carcinoma, e.g., filling defects, are not included here.

The colloidal aluminum hydroxide used in this study appears under the trade name of creamalin. It was furnished by the Alba Pharmaceutical Company, Inc.

From the Cook County Hospital Medical Service of Drs. Strauss and Foley, and from the Department of Medicine, College of Medicine, University of Illinois.

Even though we have had highly satisfying results in our management of large gastric ulcers, nevertheless we look at every one of them as a potential gastric carcinoma, and consider the decision as to their treatment of great importance. We must sympathize with the clinician who is confronted with a patient having a large gastric ulcer, because of the gravity of the therapeutic problem involved. Shall each patient with a large gastric ulcer be operated on, or shall he be treated medically, are obviously questions which go through one's mind. Neither of these questions can be answered at the beginning in the affirmative, because the correct ultimate management of this type of patient depends on his response to the immediate treatment.

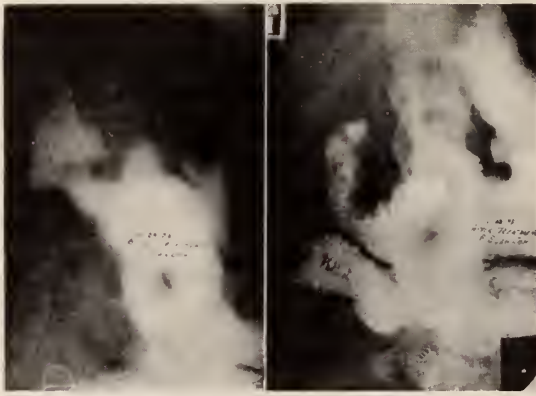
In keeping with the management of such patients in other clinics, as the Lahey, etc., it has been our routine to postpone the final decision as to our ultimate treatment of large gastric ulcers for about three or four weeks. During these three weeks of observation in which the patient undergoes intensive treatment, we look for certain criteria of improvement which are generally accepted as signs of benignity. Briefly, these are: (a) clinical improvement with loss of pain and gain of weight, (b) disappearance of occult blood from the stool, and (c) marked decrease in the size of the niche. If these signs appear, we recommend medical treatment under close supervision. If they do not, surgery is indicated.

Since the effect of the immediately instituted treatment is of such diagnostic and prognostic importance, it is obvious that this observation therapy must be carefully planned and executed. A strict Sippy management with medication and milk each half hour on the hour, plus several



CASE No. 1

additional feedings of soft food might be considered sufficiently intensive treatment. Unfortunately, however, the personal interest of the patient is too great a factor in such a regimen, so that frequently, especially in instances where the



CASE No. 2

patient is unintelligent and poorly cooperative, the above regimen is not carried out to the fullest extent. It is natural therefore to suppose that any regimen which will give the patient the necessary intensive treatment, without depending too greatly on the patient's cooperation, will be of definite value both from the therapeutic and the diagnostic point of view.

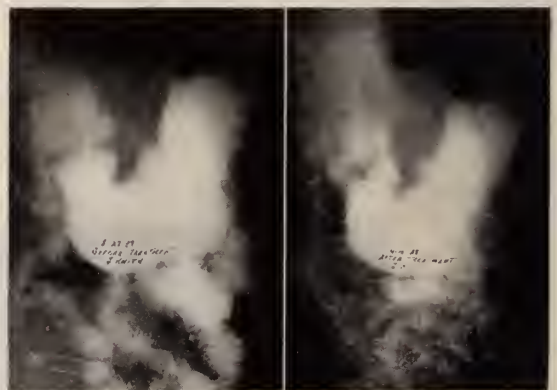
The use of aluminum hydroxide in the treatment of peptic ulcer is comparatively of recent origin. Crohn of New York described it first in 1929. The first report of a series of cases treated with powdered aluminum hydroxide appeared in 1932.¹ Later it was found that a colloidal preparation of aluminum hydroxide was of greater therapeutic value than the powder. A number of authors² have reported cases treated with such a preparation which showed definite and rapid improvement both subjectively and objectively. The latest improvement in the aluminum hydroxide treatment of peptic ulcer consisted in the introduction of the continuous aluminum hydroxide drip. The beneficial results obtained with this method of administering colloidal aluminum hydroxide in the treatment of peptic ulcer have been discussed by Emery and others.³

Having in mind the necessity of some immediate intensive medical regimen in cases of large gastric ulcer as outlined above, and being aware of the difficulties met in such a regimen because of poor cooperation, etc., on the part of the pa-

tient, we were especially attracted to the reports on the use of the continuous aluminum hydroxide drip method. It immediately occurred to us that if this method could be applied to large gastric ulcers, it would not only be of therapeutic value but also of diagnostic importance, as it would demonstrate whether the lesion would heal under the most favorable conditions, and thus prove its character as being either benign or malignant. This regimen then as given in the form described below has lately been used in some of the medical services of the Cook County Hospital, and forms the basis of our report.

In this study we proceeded as follows: As soon as the diagnosis of gastric ulcer was confirmed by the x-ray, the patient was put to bed and placed on a two-hour schedule of a bland, soft diet. A Woldman tube was introduced into the stomach and connected with a Creamalin drip apparatus. The solution dripping through the tube was made up of a 25 per cent. colloidal aluminum hydroxide mixture. The rate of flow varied from 15-20 drops per minute. The patient received on the average from 2,000-2,500 cc. of this mixture in 24 hours. Permission was given to disconnect the tube whenever the patient had to leave the bed.

With the exception of some initial gagging, or even vomiting, which necessitated the introduction of a new tube, the patients showed no signs of irritation and tolerated this soft latex



CASE No. 3

tube very well for the length of time used. The length of the continuous drip treatment varied from seven to ten days. After this time the tube was removed, and the patient was given two teaspoonfuls of the medication every two hours, for six doses, in addition to the other dietary regi-

men. X-rays of the stomach were taken shortly after finishing the continuous drip treatment, and then again at various intervals—usually one month or longer—while under observation, in order to check the progression or regression of

Not only was there a marked diminution in the size of the crater, but many of them who prior to the treatment had showed ragged, indistinct margins, presented sharply outlined, smooth edges after the seven to ten day period of the



CASE No. 4

the disease, i.e., recession or non-recession of the niche. The differences in the size of the crater were measured. Depending on the amount of decrease in the size and change in appearance of the lesion, we were able to decide with more assurance what type of treatment was most suited to a particular case.

DISCUSSION

The results of an intensive regimen with the colloidal aluminum hydroxide in the treatment of large gastric ulcers were very striking. Invariably there occurred a marked subjective im-

provement within 24-48 hours after the institution of the treatment. Furthermore, the difference in the appearance of the ulcer crater before and after treatment was quite striking, as can be seen from the various x-ray pictures.

proved in these cases to be of remarkable efficacy. The prompt disappearance of the subjective symptoms and the marked decrease in the size of the crater were, to say the least, quite im-



CASE No. 5



CASE No. 6

proved within 24-48 hours after the institution of the treatment. Furthermore, the difference in the appearance of the ulcer crater before and after treatment was quite striking, as can be seen from the various x-ray pictures.

kept under continuous intensive treatment, proved in these cases to be of remarkable efficacy. The prompt disappearance of the subjective symptoms and the marked decrease in the size of the crater were, to say the least, quite im-

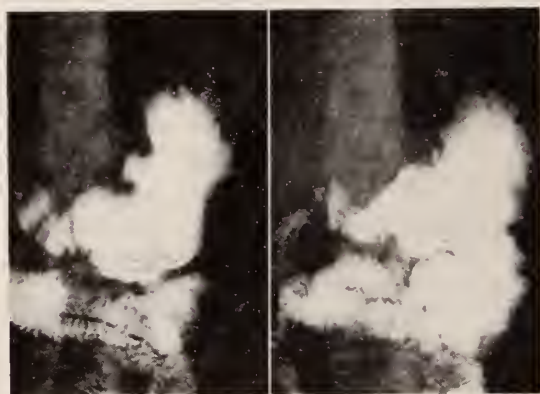
pressive. These results, however, were of value not only from the therapeutic but also from the diagnostic point of view, inasmuch as any lesion that responds so promptly and so markedly to any form of treatment, must be benign in char-

SUMMARY

1. The clinical progress and roentgenologic course of twelve patients with large gastric ulcers who were treated by the continuous aluminum hydroxide drip are discussed.



CASE No. 7



CASE No. 8

acter. The course to date in the majority of cases, even though followed for a short time only, seems to support our preliminary impressions of the benignity of these lesions.

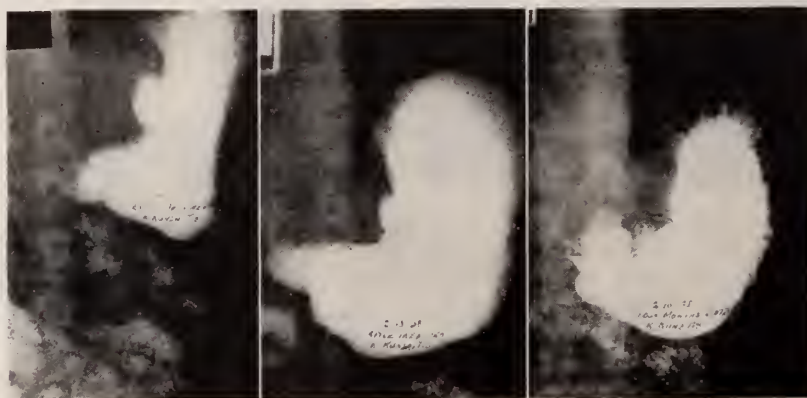
2. The favorable therapeutic results and the diagnostic and prognostic value thereof is stressed.

3. This method of treatment is suggested as a valuable "therapeutic test" in cases presenting large niches on the lesser curvature of the stomach.

55 East Washington St.

CASE HISTORIES

Case No. 1. P. K., Male, aged 73. The patient had periodic epigastric distress for four years. This pain would occur 1-1½ hours after meals and be relieved by alkali and occasionally by emesis. Admitted to the hospital first in April 1938, and was discharged four weeks later as improved. Readmitted in July 1938, and in October with slight exacerbation of symptoms improving slightly each time. Readmitted in December 1938 with symptoms of a perforated peptic ulcer, was operated upon, but died several days later of generalized peritonitis. Maximum acidity was 64 units

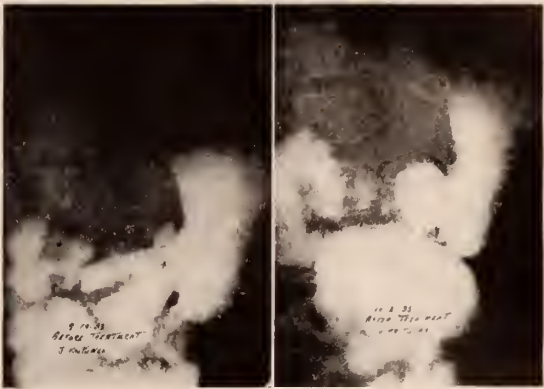


CASE No. 9

free. The roentgenologic data follow: 4/21/38—Large penetrating gastric ulcer 18 mm. deep and 26 mm. wide. On 5/17/38 the ulcer was 12 mm. deep and 18 mm. wide; while on 7/6/38 the lesion was 5 mm. deep and 15 mm. wide.

Case No. 2. P. S., Male, aged 52. The patient entered the hospital with a history of intermittent epigastric distress of two years' duration. This distress became worse in the past three weeks and responded only a little to food and medication. Maximum free acidity was 38. The patient improved but the ulcer was not completely healed when the patient left the hospital. The roentgenologic data are: on 10/29/38—large ulcer on the lesser curvature of the stomach 32 mm. deep and 20 mm. wide, strongly indicative of a gastric malignancy. On 11/13/38—large niche on the lesser curvature of the pars media 10 mm. deep and 18 mm. wide, diagnostic of a gastric ulcer. The patient has been getting along well without any gastric symptoms since his discharge from the hospital.

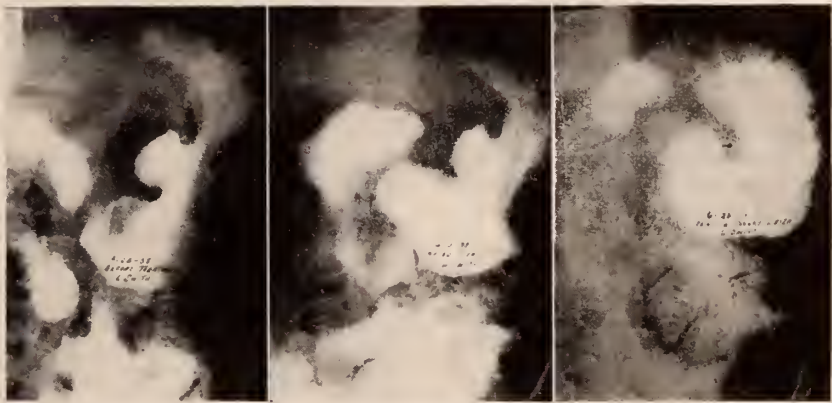
Case No. 3. J. K., Male, aged 66. The patient gave a history of vague epigastric distress for several years. Food and alkali would relieve the distress at times. Hematemesis occurred on one occasion. Loss of 30 lbs. of weight in the past year. Maximum free acidity was 42. The roentgenologic data were 8/27/38—large gastric ulcer on lesser curvature 16 mm. deep and 18 mm. wide; on 9/10/38—gastric ulcer 10 mm. deep and



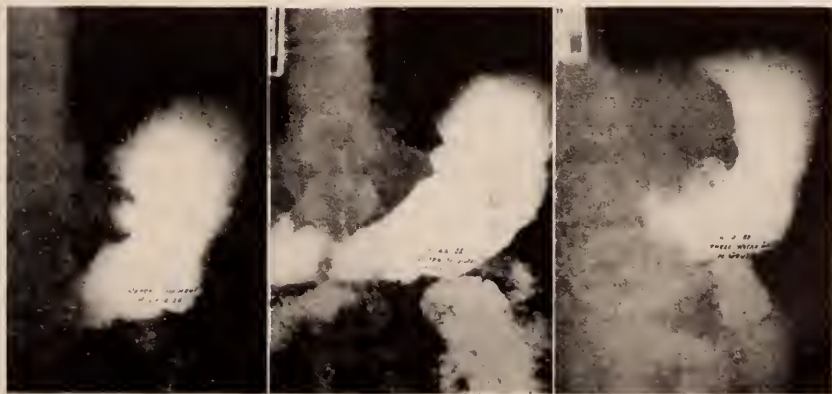
CASE No. 10

12 mm. wide. The patient has been symptom free on medical management since he left the hospital.

Case No. 4. J. A., Male, aged 49. This patient had sharp epigastric, postprandial pain after meals for one year, at times accompanied by vomiting. "Dark" stools have been noted about one month ago. Lost 16 lbs. in the past year. Only physical finding was rigidity in the upper abdomen. Maximum free acidity was 35 units. The roentgenologic data were: 10/24/38—large gastric ulcer on lesser curvature 28 mm. deep and 50 mm. wide; on 11/5/38—large niche 22 mm. deep and



CASE No. 11



CASE No. 12

35 mm. wide and on 12/3/38 the ulcer was 9 mm. deep and 10 mm. wide. The patient has been gaining weight and felt fine three months after the last x-ray picture was taken.

Case No. 5. F. H., Male, aged 51. This patient gave a two-year-old history of occasional pain in the right upper quadrant, usually associated with constipation, and not related to food. He has been a heavy drinker until shortly before the onset of above symptoms. The physical examination revealed only an anemic, slightly emaciated individual. Maximum free acidity was 20 units. The x-ray reports were: on 7/27/38—outpouching along the lesser curvature 13 mm. deep and 25 mm. wide; on 8/27/38 small niche 3 mm. deep and 8 mm. wide with hourglass constriction. The patient has been under observation in the gastrointestinal clinic since his discharge from the hospital. He gained weight and felt well when last seen (five months later).

Case No. 6. W. W., Male, aged 52. The patient has had constipation for the past ten years. In the past year nausea became an associated symptom and in recent months an almost constant epigastric pain became the most noticeable trouble. Vomiting would relieve the pain. Alkali was not tried. Lost 15 lbs. in the past few months. The maximum free acidity (after histamine) was 46 units. The x-ray reports were: on 7/25/38—penetrating ulcer 11 mm. deep and 21 mm. wide; on 8/13/38—no niche visible. Seven months after leaving the hospital the patient is symptom free and feeling fine.

Case No. 7. J. P., Male, aged 47. This patient has had a gnawing and, at times, burning epigastric pain after meals on and off for over two years. The pain would be relieved by eating. Recently vomiting would occur at the height of the pain. He has been twice on a Sippy regimen with temporary relief. Maximum free acidity was 30 units. The x-ray reports were: on 4/23/38—deep penetrating ulcer 30 mm. deep and 18 mm. wide; on 5/14/38—deep niche 16 mm. deep and 15 mm. wide with incisura opposite it; on 6/22/38—penetrating ulcer 8 mm. deep and 10 mm. wide.

Gastrosopic examination revealed a large benign ulcer. Almost two years after a large gastric ulcer was first observed, this patient has been going along well. Was symptom free in the past eight months.

Case No. 8. L. F., Male, aged 31. The patient gave a history of intermittent epigastric pain for ten years. These would usually occur after drinking episodes, and would be associated with vomiting. Hematemesis occurred on one occasion. Tarry stools were noted just before entrance to the hospital. He lost ten lbs. during the past eight days. Maximum free acidity was 12 units. The roentgenologic data were: on 9/27/38—large niche on the lesser curvature 16 mm. deep and 22 mm. wide; on 10/8/38—the ulcer was 8 mm. deep and 5 mm. wide. The patient has been symptom free since he left the hospital, four months ago.

Case No. 9. K. K., Male, aged 50. This patient gave a short (two weeks) history of sharp epigastric pain, 10-15 minutes after meals, which is usually relieved by vomiting, but only slightly by alkali. Vomi-

tus is occasionally bloody and mixed with food particles. Tarry stools were noted once. Maximum free acidity was 90 units. The x-ray data were: on 7/26/38—large outpouching on lesser curvature 18 mm. deep and 35 mm. wide; on 8/13/38—penetrating ulcer 9 mm. deep and 18 mm. wide, and on 12/10/38—small niche 2 mm. deep and 4 mm. wide. This patient has been going along well since he left the hospital six months ago.

Case No. 10. J. K., Male, aged 55. Six months ago the patient first began to have symptoms of epigastric pain, after meals, relieved by food, alkali and vomiting. Shortly thereafter he had a gastric hemorrhage and was taken to the hospital, where he received a blood transfusion and was then put on a Sippy regimen. Was symptom free for six months i. e., until one week ago, when pain and vomiting recurred. Lost 15 lbs. in one week. Maximum acidity was 80 units. The x-ray reports were: on 9/19/38—large niche on lesser curvature 18 mm. deep and 27 mm. wide, also a duodenal ulcer on 10/8/38 gastric ulcer 5 mm. deep, 8 mm. wide. Duodenal deformity still present. Patient has been symptom free in the past four months and has gained weight.

Case No. 11. L. S., Male, aged 60. This patient had "gastritis" 12 years ago and since then had "gas" after dietary indiscretions. About six months ago, however, he became aware of an upper abdominal soreness which would occasionally radiate to the back. This soreness would be eased by food and alkali, but little by vomiting. Constipation was an associated discomfort. Lost 25 lbs. during this time. Maximum free acidity was 36 units. The x-ray data were: on 3/25/38—large niche on lesser curvature 30 mm. deep and 41 mm. wide; on 4/2/38—large niche 20 mm. deep and 30 mm. wide; on 6/25/38—very small ulcer 2 mm. deep and 3 mm. wide. The patient gained 34 lbs. since he left the hospital and has been symptom free for nearly one year now.

Case No. 12. N. G., Male, aged 53. This patient gave a vague history of occasional abdominal distress for years. Four weeks before entrance to the hospital, his pain became more severe and almost constant and was not relieved by his usual remedies. He came to the hospital because of this severe pain and the vomiting which started recently. There were no important physical findings except that patient seemed to be doubled up with pain. Maximum free acidity was 26. The x-ray data were: on 10/12/38—large gastric niche 20 mm. deep and 22 mm. wide; on 10/22/38—gastric ulcer 10 mm. deep and 15 mm. wide; on 11/14/38—small gastric lesion 3 mm. deep and 10 mm. wide. The patient has been symptom free since leaving the hospital four months ago.

55 E. Washington St.

BIBLIOGRAPHY

1. Einsel, I. H., and Rowland, V. C. The Aluminum Hydroxide Treatment of Peptic Ulcer, *Ohio State Med J.* 28: 173, 1932.
2. a. Einsel, I. H.; Adams, W. L., and Myers, V. D.: Aluminum Hydroxide in the Treatment of Peptic Ulcer, *Am. J. Dig. Dis. and Nutrit.* 1: 513, 1934.

b. Jones, C. R.: Colloidal Aluminum Hydroxide in the Treatment of Peptic Ulcer, *Am. J. Dig. Dis. and Nutrit.* 4: 99, 1937.

3. a. Waldman, E. E., and Rowland, V. C.: A New Technique for the Continuous Control of Acidity in Peptic Ulcer, *Am. J. Dig. Dis. and Nutrit.* 2: 733, 1936.

b. Idem. Continuous Acid Absorption by Aluminum Hydroxide Drip in the Treatment of Peptic Ulcer, *Rev. Gastro.* 3: 27, 1936.

c. Emery, E. S., and Rutherford, R. B.: Studies on the Use of Aluminum Hydroxide Gel in the Treatment of Peptic Ulcer, *Am. J. Dig. Dis.* 5: 486, 1938.

TREATMENT OF PORTWINE BIRTH-MARKS (NEVUS FLAMMEUS) BY GRENZ RAYS

CLEVELAND WHITE, M. D.
CHICAGO

HISTORY OF GRENZ RAYS

The term "grenz rays," applied to electromagnetic oscillations produced by a special form of apparatus, was chosen by Bucky^{1,2} because he considered the oscillations to lie between the ultraviolet and the x-rays. While the grenz rays are heterogeneous, the majority of them are of the order of two Angström units. The minimum wavelength of two Angström units is very close to x-ray waves that are used therapeutically but are quite far from ultraviolet rays. The term "grenz," then, or borderline rays, is one that is generally used at the present time; at times they are called the supersoft or infra-roentgen or x-rays of long wavelength because they are roentgen rays of extremely long wave-length and large absorption coefficient.

The original work with the so-called grenz rays was done by Shultz,³ who reported his findings in 1911. Many other reports are now available, but the man who has done a great deal of clinical and experimental work in this connection is Bucky. Bucky's findings and opinions from his textbook⁴ and various writings will be freely quoted. Eller⁵ had recorded his findings in dermatologic fields. While there is still controversy as to the efficacy of the grenz rays in dermatology, and, as Bucky says, a great deal of research work is still needed there is no question of their value in my experience in certain dermatologic diseases both because of their curative ability and their relative freedom from serious post-treatment sequelae in contrast to those fol-

lowing excessive conventional hard or short wavelength rays.

PHYSICS

There are some differences of opinion regarding the status of rays produced by voltages from 5 to 10 kv. Bucky rather sets them aside as a separate radiation with a place in the spectrum between the ultraviolet and the roentgen rays, being considered of a wavelength of about 1.5 to 2 Angström units. He feels that almost all their energy is absorbed by the tissues, e.g., skin of about 2 mm. thickness. Most investigators give the roentgen ray spectrum as ranging between 0.05 and 500 Angström units or more. This would naturally place the grenz rays well within the range of roentgen rays and would coincide with Failla's⁶ and with Pusey's⁷ statements, that they should have all the physical properties of conventional roentgen rays. Eller has investigated the penetration power of rays produced by 8 kv. with a Mueller tube and obtained photographs of metallic objects through a filter of 1 mm. of aluminum. The other factors were 8 milliamperes, distance 6 cm. and time four minutes. This is rather conclusive evidence that part of the beam of the rays produced with a power of 8 kv. can easily penetrate the cutis. Both Frank and Bucky have shown that half of the grenz radiation, as 10 kv., is absorbed in 0.47 mm. of water, in 0.52 mm. of muscle or cutis vera, in 0.56 mm. of epidermis, or in 0.77 mm. of subcutaneous tissue.

BIOLOGY

Many interesting biologic phases of the grenz rays have been recorded. Bucky feels that the wavelengths of about 2 Angström units are chiefly absorbed by the epidermis and have very little direct action upon the subcutis. He feels that it is quite impossible for sequelae to develop even with marked erythema doses of 10 kv. or less. Several instances have been recorded of telangiectasia following larger doses (Bucky), but this disfigurement becomes involuted in time. It is generally agreed that the serious disfiguring sequelae, so often seen in patients who have been treated by x-ray, do not occur. These untoward results include telangiectasia, atrophy of the skin, keratoses, late ulcerations, precancerous and malignant growths, besides hyalinization of the skin with intractable pruritis and other skin changes. I have recently seen even a

*Read before the Norwegian American Hospital Staff Conference, December 8, 1938.

**From the Department of Dermatology, Northwestern University Medical School, Chicago.

fibrosarcoma of the skin of the nose following x-ray dermatitis in a young woman who had received twenty-two x-ray treatments to her face.

This apparent freedom from serious untoward results has prompted me to investigate clinically the possibilities of grenz ray therapy in a number of skin conditions. Only a few syndromes were chosen in an effort to determine definitely the efficacy of this form of treatment. In my own experience patients are resisting more and more the use of x-ray because of the well-known x-ray burns, which danger is practically nil in skilled hands. Three hundred and eighty-nine patients have been treated by the grenz rays with an average of $6\frac{1}{2}$ treatments. The standard Westinghouse machine has been employed with 8 kv. and 8 milliamperes as a constant setting, except in birthmarks. The other factors, such as distance and time, were changed to suit the condition and the area to be treated. The possibility that grenz rays might supplant the hard or roentgen ray was another reason for using them and also, because by some previous observations (White and Dorne^{8,9}), it was found that some dermatologic entities actually yielded more rapidly to the grenz ray than to the ordinary x-ray treatment. Furthermore, it was decided to use the grenz rays in fractional doses, with roughly one-fourth of a skin erythema dose (80 r. for the usual dermatosis), to see if fractional therapy would be of value and to prevent erythema doses with their resultant pigmentation and possibly telangiectasia. Many investigators have used erythema doses with ordinary dermatoses. Much stronger doses were applied in the treatment of keloids and epitheliomas. It was particularly advantageous to prevent resultant hyperpigmentation, for it is well known to last for several months. At this conference, only the results of treatment of portwine birthmarks will be reported.

DESCRIPTION OF NEVUS FLAMMEUS

There are various types of the vascular birthmark, or nevus vascularis, the most common types being the flat, hypertrophic and cavernous. The flat nevus, or so-called nevus flammeus or portwine birthmark, is a superficial plexus of dilated capillaries. The hypertrophic and cavernous types of nevus have responded very well to radium therapy; however, results of similar treatment in nevus flammeus have been prac-

tically nil. Consequently, various modalities have been sought and followed to see if something could not be done for this cosmetic defect.

The nevus flammeus, then, is a superficial, flat nevus occurring as an area of redness and produced by a network of dilated capillaries. On close examination this can be made out with the naked eye. The color is usually bright red of different intensity in different cases according to the vascularity present. Occasionally it is dark red or even bluish-red. The border, in this as in other forms of nevus, is sharp, but there may be small needle-like rays along the border of the chief lesion or radiating irregularly from it. The shape of the lesion is quite irregular and there is practically no limit to its size. The most frequent locations are the face and head, but they may occur anywhere. The commonest site is said to be the back of the head just below the occipital prominence. Cases which come under observation of the dermatologists are most frequently on the face.

PREVIOUS METHODS OF TREATMENT

Former treatment of these lesions consisted of radium, x-ray and the Kromayer watercooled lamp. However, with radium and x-ray the dosage must be so strong that a serious radio-dermatitis invariably results. Consequently there is a tendency towards carcinoma. These x-ray atrophies are so serious that x-ray and radium cannot be used in the treatment of these birthmarks. An occasional case has been reported as improved by the Kromayer lamp, but in the main this treatment has been very unsuccessful in the hands of most dermatologists. Destructive methods, such as the carbon dioxide snow method, have been used by some dermatologists but have produced irregular postage stamp scars, so the condition is just as unsightly as it was before treatment.

Because of the nature of grenz rays, they should be of help in cases of this type. However, in a report made in 1936 of the use of grenz rays in nevus flammeus, I stated that two cases had been treated and showed no response. Now, with increased experience and using larger dosage, it has been found that the grenz rays are efficacious in improving the cosmetic result with marked bleaching of the birthmark.

THERAPEUTIC RESULTS

In the average case Kalz of Prague applied grenz rays in a single dose of from 800 to 1,100 r.

with a total dosage of 10,000 to 12,000 r. The factors he used are 12.5 kv., 15 ma., with .0026 aluminum filter and a distance of 7 cm. The surrounding areas, of course, are protected by barium zinc paste. When the lesion is located near the eye or in the anterior portion of the neck, diminished dosage is used, not surpassing 700 to 800 r. per unit, with a total of 7,000 to 8,000 r., since these areas may develop telangiectasia if the treatments are too large. Large nevi are best treated by subdividing into smaller fields, diminishing the dosage to each field 20 per cent., while smaller nevi may be treated with 20 per cent. above the average amount. In children he uses a single dose of 800 r. per treatment, with a total of 8,000 r., never more than 8,000 r. For deep-seated lesions an additional filter of .001 mm. is recommended.

The degree of reaction following the first irradiation, the location or site of the nevus, its clinical aspect and the age of the patient are all factors in the evaluation of proper dosage. Kalz found that in 31 patients in whom the treatment could be finished properly, there were several who showed telangiectasia who received the higher doses with no tendency toward progression of the nevus flammeus. One patient showed alopecia of the eyebrows. Occasionally a staphylococcal infection, such as impetigo, occurred which was believed to be caused by vascular paresis.

The prognosis for improvement is best in small children and is better in light colored than in deep red lesions. While pigmentation may disappear spontaneously, the development of small dark brown patches is a serious symptom, necessitating the discontinuance of grenz ray therapy.

In the 1937 Yearbook of Dermatology, Wise and Sulzberger state: "Since neither x-ray nor ordinary radium therapy or surgery is permissible or satisfactory in most cases, a method like the grenz ray, and other related safe modalities, deserves further careful study at the hands of the American dermatologist."

Repeated treatments with the grenz, or soft xray, will definitely produce a marked bleaching in nevus flammeus, or so-called portwine birthmarks. Up to this time there has been no form of treatment that could be used without danger in capillary birthmarks of this type. My own experience has been limited to eight cases, all

in adults, in whom the birthmark has been present for many years. With therapy extending over three to nine months' time, treatments being given every two weeks, lesions have shown marked bleaching and in the main results have been very satisfactory.

122 South Michigan Avenue.

BIBLIOGRAPHY

1. Bucky, Gustav: Actual Superficial Therapy by "Grenz" (infra-roentgen) Rays, *Arch. Dermat. et Syphil.* 15: 672, 1927.
2. Bucky, Gustav: "Grenz" (infra-roentgen) Ray Therapy, *Am. J. Roent. and Radium Therap.* 17: 646, 1927.
3. Schultz, Frank: X-ray Treatment of Skin Diseases, New York, Rehman Company, 1911.
4. Bucky, Gustav: "Grenz Ray Therapy," New York, Macmillan Co., 1929.
5. Eller, J. J.: Super-soft Roentgen Rays (2A) in Dermatology, *Am. J. Roent. and Radium Therapy* 18: 433, 1927.
6. Failla, G.: Discussion, New York Roentgen Society, New York, October 17, 1927.
7. Pusey, W. A.: Discussion of paper by Eller and Bucky, May 1927 (*Arch. Dermat. and Syphil.* 17: 18, Feb. 1928).
8. Dorne, Maurice, and White, Cleveland: The Treatment of Superficial Fungus Infections with Grenz Rays, *Arch. Dermat. and Syphil.* 24: 409, 1931.
9. Dorne, Maurice, and White, Cleveland: Further observations, *Radiol.* 17: 727, 1932.
10. Kalz, F.: The uses of Grenz Rays, *Dermat. Fzshr.* Sept. 1934.
11. Wise, Fred, and Sulzberger, Marion B.: Year Book of Dermatology and Syphilology, Chicago, Year Book Publishers Company, 1936.
12. White, Cleveland: Grenz Rays in Dermatology, *Arch. Physical Therapy*, 18: 139, March 1937.

TRUE KNOTTING OF THE UMBILICAL CORD

A. T. LUNDGREN, M. D., and WM. A. BOICE, M.D.
From Augustana Hospital

CHICAGO

The possibility of knotting of the cord during pregnancy has long been recognized. Although twisting, looping and coiling of the cord are relatively commonly observed, a true knot of the umbilical cord remains a sufficiently bizarre phenomenon to justify further discussion of the subject and presentation of further cases observed in private practice.

It is generally agreed by most authors that true knots in the cord occur in about 0.5% of all cases. Von Winckel¹ estimates the incidence to be from 0.4% to 0.5% of all births. Chantreuil² found six cases of knots in the umbilical cord (one of which was double) in 1,000 deliveries, whereas Von Hecker³ reported true knots in 115 cases out of 31,590 births or one in every 274 cases, with no injury to any of the children. Mundé⁴ saw two cases in 1,000 deliveries, Red-

TABLE: CASES OF KNOTS IN THE CORD

COLLECTED FROM ENGLISH LITERATURE

Author	Source	Age	Parity	Length of cord	Description of knot	Fetal Result	Author's opinion of effect of knot
Barton (8)	Va. M. Monthly 22:859, 1895	..	..	.....	.....	Died	Knot tight enough to stop circulation
Benedict (9)	Med. & Surg. Rep. 63:435, 1890	28	M	.....	Single knots (2)	.....
Benedict (9)	Med. & Surg. Rep. 63:435, 1890	33	M	26 in.	Single knots (2)	Rec.	No demonstrable interference with circulation
Benedict (9)	Med. & Surg. Rep. 63:435, 1890	37	M	short	2 knots	.....
Browne (10)	32:17, 1925 J. Obst. & Gynec. Brit. Emp.	31	M	60 cm.	Knot in middle tightly drawn	Died	Knot in cord
Browne (10)	32:17, 1925 J. Obst. & Gynec. Brit. Emp.	18	M	.....	.....	1 twin died	Twin that died was monster
Clarke (11)	Brit. M. J. 1:80, 1883	..	M	20 in.	Knot 6 in. from umbilicus	.....	Knot not tight enough to impede circulation
Cleveland (12)	Obst. Trans. Lond. 13, 1872	..	M	17 in.	Knot 3 in. from navel	Died	
Cowern (13)	St. Paul M. J. 17:459, 1915	..	..	.....	.....	Died	Knot so tight that nutrition of fetus cut off
Cowern (13)	St. Paul M. J. 17:459, 1915	..	..	.....	Single knot	.....
Cowern (13)	St. Paul M. J. 17:459, 1915	..	..	.....	2 knots	.....
Cowern (13)	St. Paul M. J. 17:459, 1915	..	..	.....	2 knots 4 in. apart	.....
Crawford (14)	17:459, 1915 Surg. Gynec. & Obst. 34:546, 1922	44	M	.....	4 true knots, 6 false knots	SB	Unusual activity of fetus caused death
Cuthbert (15)	Obst. J. 1874-75 2	30	M	17 in.	Simple knot	Died	
Davy (16)	Obst. Gazette 1:344, 1878	..	..	usual length	Knot in center	Died	Death caused by knot in cord
Fleming (17)	19:297, 1924 Tex. St. M. J.	..	..	48 in.	1 knot 1 ft. from placenta 1 knot 1 ft. from umbilicus	.....
Floyd et al. (18)	Tri-State M. J. 6:1308, 1934	26	M	.....	Knot near middle and placental thirds	Rec.	
Frank (19)	Am. J. Obst. 55:790, 1907	31	M	90 cm.	1 knot 30 cm. from placenta	Died	
Frewer (20)	Brit. M. J. 1:159, 1936	..	P	.....	2 knots	1 twin died	
Grieve (21)	Lond. & Edinburgh Monthly J. 1842, p. 23	..	..	.....	Knot in middle	Died	Knot tight enough to impede circulation
Griswold (22)	Physician & Surgeon 34:420, 1912	25	P.	.....	Bow knot about left arm	Rec.	Knot not tight enough to obstruct blood supply
Guinness (23)	Brit. M. J. 1:875, 1922	24	M	long	Single knot	SB	
Hannay (24)	Lond. Med. Gaz. 27:122, 1840	28	M	.....	Single knot near middle of cord	SB	
Lyon (25)	Glasgow Med. Soc. Dec. 1838	..	..	.....	Loose knot on cord	Rec.	

Pagon (26)	Glasgow Med. Soc. Dec. 1838	..	..	.....	Loose knot on cord	Rec.	
Smellie (27)	Theorie & Practice of Midwifery, p. 118	..	..	.....	Tight knot on middle of cord	Died	Died as result of condition of cord
Smellie (27)	Theorie & Practice of Midwifery, p. 118	..	..	.....	Knot in cord	Rec.	
Smellie (27)	Theorie & Practice of Midwifery, p. 118	..	..	.....	Loose knot	Died	Probably died of long labor
Blundell (28)	Castle's Prin. & Practice of Obst. 1st ed. p. 108	..	..	.....	3 knots in cord	.....
Ashwell (29)	Practical Treatise on Parturition	..	..	.....	5 knots	Rec.	
Petit (30)	Quoted by Burton in Essay on Midwifery. Lond. 1751	..	..	.....	Knot in middle	.....
Jones (31)	Med. Brief. St. Louis 13:190, 1885	..	M	24 in.	Knot in cord about 8 in. from child	Rec.	
Doane (32)	Leonard's Illustrated Med. J.	..	..	26 in.	Knot 3 in. from umbilical end	Rec.	
Christian (33)	Leonard's Illustrated Med. J.	30	P	.....	Reef knot in middle	Died	
MacCauley (34)	Med. Press & Circ., Lond. 1892, p. 453	..	M	45 cm.	1 knot	Died	So tight as to obstruct circulation and cause death of fetus
Mack (35)	Natl. Elect. Med. Assn. 11:286, 1919	..	..	.....	Loose figure 8 knot	Rec.	Asphyxia neonatorum
McCormick (36)	J. Indiana M. A. 22:245, 1929	31	..	.....	Tight knot 54 cm. from placenta	Dead	
Mitchell (37)	Am. J. Obst. & Gynec. 37:342, 1939	29	M	82 cm.	Knot near center of cord	Dead	Death from knot in cord
Morris (38)	Med. & Surg. Rep. 40:466, 1889	42	..	.....	Loose knot	Rec.	
Munde (4)	Am. J. Obst. N. Y. 12:751, 1879	..	P	32 in.	Knot in cord	.....
Munde (4)	Am. J. Obst. N. Y. 12:751, 1879	29	M	62 cm.	Knot 45 cm. from placenta	Died	Circulation completely obliterated
McNally (39)	Am. J. Obst. & Gynec. 36:156, 1938	..	..	long	Knot about 3 in. from umbilicus	Rec.	Not tight enough to obstruct circulation
Oswald (40)	Brit. M. J. 1:100, 1883	20	P	40 in.	Knot near placental end	SB	Author thinks child died during labor
Parker (41)	Boston M. & S. J. 97:28, 1877	35	M	long	Tied about its middle in tight knot	Dead	Author believes knot caused death
Poolley (42)	Am. Med. Bi-weekly 12:169, 1881	30	..	.....	Knot near fetal end	Dead	Knot completely obstructed circulation
Leidy (43)	Med. & Surg. Rep. 18:402, 1868	..	..	over 4 ft.	.....	.....
Redman (5)	Lancet & Clinic 1880 p. 274	..	..	over 4 ft.	.....	.....
Redman (5)	Lancet & Clinic 1880 p. 274	..	..	over 4 ft.	.....	.....
Redman (5)	Lancet & Clinic 1880 p. 274	..	..	.....	.....	.....
Nolan (44)	N. Y. Path. Soc. Apr. 14, 1869	..	..	24 in.	.....	Rec.	

Author	Source	Age	Parity	Length of cord	Description of knot	Fetal Result	Author's opinion of effect of knot
Beale (6)	N. Y. Path. Soc. Apr. 14, 1869	..	..	.....	.....	.....
Beale (6)	N. Y. Path. Soc. Apr. 14, 1869	..	..	.....	.....	.....
Beale (6)	N. Y. Path. Soc. Apr. 14, 1869	..	..	.....	.....	.....
Beale (6)	N. Y. Path. Soc. Apr. 14, 1869	..	..	.....	.....	.....
Quigley (45)	Am. J. Obst. & Gynec. 29:335, 1935	34	P	.....	Cord of first child tied in mass of knots of 2nd child	1 twin died	
Sankey (46)	Obst. Trans. 3, 413	43	M	.....	Simple knot in middle	Died	Author does not believe knot caused death
Simpson (47)	Obst. J. Gr. Brit. 6:577, 1878	..	M	35 in.	Knot 9 in. from umbilicus	Rec.	
Stern (48)	Med. & Surg. Rep. Phila. 39:108, 1878	15	..	.....	Knot 8 in. from umbilicus	Died	Believes death from knot in cord
Walker (49)	Med. Herald. Louisville 5:529, 1883	..	..	40 in.	Knot in cord	Rec.	Did not impede circulation
Waters (50)	Am. J. M. Sci. 36:358, 1845	..	M	.....	Knot 1 ft. from umbilicus	Rec.	Did not impede circulation
Waters (50)	Am. J. M. Sci. 36:358, 1845	..	M	long	1 knot	Rec.	Did not impede circulation
Waters (50)	Am. J. M. Sci. 36:358, 1845	..	M	33 in.	1 knot 2½ in. from navel	Rec.	Did not impede circulation
Wells (51)	Boston M. & S. J. 96:571, 1877	..	M	58 in.	Knot 1 ft. from placenta	SB	Did not impede circulation
Weston (52)	Am. J. Obst. 28:144, 1893	..	..	long	.....	Rec.	Knot tied so tight it could not be untied
Zollickoffer (53)	Am. J. M. Sc. 28:109, 1841	..	..	.....	.....	Rec.	
Zollickoffer (53)	Am. J. M. Sc. 28:109, 1841	..	..	.....	.....	Rec.	
Zollickoffer (53)	Am. J. M. Sc. 28:109, 1841	..	..	.....	.....	.....
Partridge (7)	Am. J. Obst. 13:114	..	..	.....	2 knots	.....
Partridge (7)	Am. J. Obst. 13:114	..	..	33 in.	1 knot	.....
Partridge (7)	Am. J. Obst. 13:114	..	..	33 in.	Figure of 8 knot	.....
Partridge (7)	Am. J. Obst. 13:114	..	..	.....	.....	.....
Mastin (54)	N. O. M. & S. J. 19:460, 1866	..	..	.....	Knot in funis	Died	Died from knot in cord
Bradley (55)	Proc. Northumb. & Durham M. Soc. 1889	..	..	.....	Knot in cord	.....
Holliday (56)	Cleveland J. M. 5:496, 1900	..	..	.....	Knot in cord	.....

man⁵ four in 10,000 births, Beale⁶ four in 1,220 and Partridge⁷ four in 500 cases. The sum of all these cases totals one in every 335 cases, or an incidence of 0.3%. A comprehensive search of the American literature reveals 75 cases which have been recorded (see table). We have been able to find 37 articles on knots in the cord in the foreign literature,⁵⁷⁻⁹⁴ most of which have occurred in France and Germany (20 and 11, respectively). Whereas there is little doubt that there have been cases which have not been reported, we can make an approximation of the occurrence of this anomaly from cases reported, which is adequate enough for all practical purposes. The figures quoted above are obviously indicative of the rarity of true knots of the umbilical cord.

Atwood⁹⁵ noted that knotting of the cord is not characteristically observed in animals. Sellheim⁹⁶ believes that this condition occurs in human beings because of "their upright position, their ability to swing about rapidly on a vertical axis, the heavy head of the human fetus as compared with the body and to the fact that it must remain longer in bent position before reaching the pelvic outlet."

The mechanism of formation of a knot in the umbilical cord is still subject to conjecture. Most men believe that knotting occurs either between the ninth and twelfth weeks of intra-uterine life, during which time the fetus is sufficiently small to swim around freely in the amniotic fluid and the cord is sufficiently long to facilitate twisting and knotting, or during the progress of labor, a process which lends itself quite readily to complications. Others believe that outside stimuli are a contributing factor. No explanation has as yet been offered which is entirely satisfactory.

Atwood⁹⁵ believes that the process of formation of a true knot in the cord includes "contraction of the uterus, passivity, subsequent sudden activity on the part of both the mother and fetus and the laws of gravitation." He observed that knots situated close to the navel indicate early formation, whereas knots formed later were located near the placental end. Sellheim⁹⁶ noticed that knots formed during pregnancy were firmer than those formed during parturition.

The length of the cord seems to be a contributing factor in the formation of knots. The

normal length of the umbilical cord has been estimated to be about 50 cm. (DeLee⁹⁷) or from 20 to 22 inches (Baudelocque⁶⁰). The average length of the cord in our series was approximately 82 cm. (33 inches). The shortest cord recorded in our series was 43 cm. (17 inches) and the longest 145 cm. (58 inches). However, Collins⁹⁸ in 1842 recorded a case of two knots in the cord, which was only six inches long and Woets⁸⁰ records a case in the French literature of a 14-inch cord.

We are unable to say whether parity played any part in this group of 75 cases because of the failure to record this information in 44 instances. In the 31 cases in which the parity was mentioned 24 were multiparae. We hesitate to generalize from such a small number, but from this number, knots have occurred more than three times as often in multiparae as in primiparae. As regards sex of the baby we can only mention the number of cases in which the sex was specified, which is too small to be beneficial. There were seven female babies with knots in the cord and four males.

Cords with knots offer a characteristic appearance. They are usually quite long and often edematous and engorged, particularly near the knot. The cord is almost always dark in color, frequently greenish black to black. The knot, which may be a simple knot (15, 47, etc.), bow-knot (22), or figure of eight (36), may be situated at any point, either near the placental end (42) or the fetal end (44) and sometimes in the center (16). If the knot is tight, a distinct and permanent grooving may be observed at the point of its formation. Where the knot is compressed there is hardly any jelly of Wharton, so that here the cord is flat in appearance. Some knots are quite loosely formed, whereas others are so tight that they cannot be untied (52).

The effect of knotting of the cord on the fetus is still questionable. Atwood⁹⁵ estimates the fatal effect of this abnormality on the fetus to be 50% of occurrences. It would appear to depend somewhat on the tightness with which the cord is drawn (the looser the knot, the more favorable the prognosis) and the time of formation (knots formed earlier are usually more fatal). In this series of 75 cases the result was recorded in 49 cases—28 died and 21 survived. The authors did not attribute death of the infant to knot of the cord in four of the 28 cases,

so that in this small number knots were responsible for the fatal result in about 53% of the cases.

Various opinions have been expressed concerning the question of interference of fetal circulation by a knot in the cord, there being an almost equal number of advocates of either opinion. Baudelocque⁶⁰ believed that the cord could not be drawn tight enough to cause death of the fetus. He reported a case of a healthy child, whose umbilical cord was knotted three times, one knot interlaced in the other, and drawn as tightly as it could possibly be done. Gardien⁹⁹ was of the same opinion as Baudelocque when he wrote, "they can never tighten themselves during the pregnancy sufficiently to cause the death of the fetus or interfere with its circulation." Among others who have expressed similar opinions are Jacquemier¹⁰⁰ and Tannier.¹⁰¹ Tannier¹⁰¹ offered experimental evidence to verify his statements.

Among those expressing the opposite opinions are Chantreuil,² Levret,¹⁰² Naegle and Grenser,¹⁰³ Smellie²⁷ and Browne.¹⁰ Browne¹⁰ bases his opinion on the following experiment which he performed to prove his conviction: "An umbilical cord was taken immediately following delivery and separated from the placenta. A glass canula was fitted into the vein while to the other end of the canula was fixed a long rubber tube connected with a mercury manometer. Through the open end of the tube water was injected by means of a large Record syringe. During the experiment the surface of the cord was kept well lubricated with vaseline so that its slippery surface might resemble uterine life." When there was no knot in the cord, the fluid passed at a pressure of 10 mm. of mercury. When one knot was on the cord, no weight attached and the knot not tightened in any way, pressure was 20 mm. With two true knots pressure was 60 mm. A single true knot in the cord and a weight of 20 gm. was tied at the distal end. Fluid passed at a pressure of 40 mm. With a 50 gm. weight a pressure of 70 mm. was required and so proportionately up to 160 gm. requiring 165-170 mm. pressure. Browne concluded from these experiments that even a slack knot was sufficient to interfere with circulation.

CASE REPORTS*

Case 1. Mrs. A. R., white, para 1, 26 years of age. The past history was uneventful except for a pelvic

laparotomy two years previously at which time a left oophorectomy and appendectomy were performed. Menstruation began at the age of 14 with a slightly irregular cycle but no pain. The prenatal course was uneventful until two days before her admission to the hospital at which time she was seen in the office and said that she had not felt the baby move since the day previously. Fetal heart tones were not heard at this time. The mechanism of labor was normal, first stage five and five-sixths hours, second stage 40 minutes and the third stage 16 minutes. A stillborn female infant was delivered spontaneously. The infant was well developed and of normal size and weight but was macerated and appeared to have been dead for at least four days. There were two complete half-hitch knots one foot apart near the center of the cord which measured 120 cm. after the knots were untied. In addition to the knots in the cord there were two loops of cord around the baby's neck. It is our opinion that these knots were formed by the loops slipping back over the baby's body and that one of the knots was tied sufficiently to cause asphyxiation of the baby. It is of interest to note that this patient was delivered of a full term living baby on October 2, 1938, at which time the cord was found to be 86 cm. long and there were three loops around the baby's neck.

Case 2. One of us (A.T.L.) has seen one other case. This was a primipara who was delivered spontaneously of a full term male fetus which was stillborn and there was a true knot tied tightly in the cord which was of normal length.

Since this article was acceptable for publication, the authors have had one additional case on their service. The mother was a 30 year old para VI. The female infant was 50 cm. long weighing 7 lb. 2 oz. The cord was 65 cm. long and there were two true knots, one of which was very tight and the vessels proximal to this knot were collapsed. The baby's heart had failed a short time before delivery and it is our opinion that the constriction of this knot was responsible for the fetal death.

BIBLIOGRAPHY

1. Von Winckel: quoted by Browne.
2. Chantreuil, A.: *Des Dispositions du cordon qui peuvent troubler la marche régulière de la grossesse et de l'accouchement* Thèse, Paris, 1875.
3. Von Hecker: quoted by Browne.
4. Mundé, P. F.: True knot in an umbilical cord; floating kidney. *Am. J. Obst. N. Y.* 12: 751, 1879.
5. Redman: quoted by Pooley.
6. Beale: quoted by Pooley.
7. Partridge: quoted by Walker.
8. Barton, W. H.: Case of knotted cord causing death of fetus, *Virginia M. Monthly* 22: 859, 1895.
9. Benedict, A. L.: Knotted Umbilical Cord, *Med. and Surg. Reporter*, Phila 63: 435, 1890.
10. Browne, F. J.: On the abnormalities of the umbilical cord which may cause antenatal death, *J. Obst. and Gynec. of Brit. Emp.* 32: 17, 1925.
11. Clarke, B.: Knots in Umbilical Cord, *Brit. M. J.* 1: 80, 1883.
12. Cleveland: quoted by Browne.
13. Cowern, E. W.: Knots in Umbilical Cord, *St. Paul M. J.* 17: 459, 1915.
14. Crawford, W.: True and False Knots in Umbilical Cord, *Surg. Gynec. and Obst.* 34: 546, 1922.
15. Cutbert: quoted by Browne.
16. Davy, R. B.: Intra-uterine Knotting of the Umbilical Cord, *Obst. Gazette* 1: 344, 1878.
17. Fleming, H. G.: An Umbilical Cord Freak, *Texas State Medical Journal* 19: 297, 1924.

18. Floyd, W. H. and Kittrell, J. M.: An interesting and unusual obstetrical case, *Tri-State M. J.* 6, 1308, 1934.
19. Frank: Knot in umbilical cord, *Am. J. Obst.* 55: 790, 1907.
20. Frewer, E. F.: Twins with doubly knotted cords, *Brit. M. J.* 1: 159, 1936.
21. Grieve, J.: Case of knot in funis umbilicalis causing death of the fetus, *Lond. and Edinburg Monthly J. M. Sc.* 2: 23, 1842.
22. Griswold, D. M.: A case of true knot of umbilical cord, *Physicians and Surgeons, Detroit and Ann Arbor* 34: 420, 1912.
23. Guinness, A. F. G.: Knot in umbilical cord as cause of accidental hemorrhage, *Brit. M. J.* 1: 875, 1922.
24. Hannay, A. J.: Case of a Knot on the Umbilical Cord, *Lond. M. Gaz* 27: 122, 1840.
25. Lyon: quoted by Hannay.
26. Pagon: quoted by Hannay.
27. Smellie: *Theories and Practice of Midwifery*, Vol. 2, p. 118.
28. Blundell: *Castle's Principles and Practice of Obstetrics*, 1st Ed., p. 108.
29. Ashwell: *Practical Treatise on Parturition*.
30. Petit: quoted by Burton in *Essay on Midwifery*, *Lond.* 1751.
31. Jones, F. M.: *Knots in the Umbilical Cord*, *Med. Brief*, *St. Louis* 13: 190, 1885.
32. Doane: quoted by Jones.
33. Christian: quoted by Jones.
34. Macauley, R.: Case of death of the fetus in utero from a knot on funis, *Med Press and Circ. Lond.* 1892, p. 453.
35. Mack, F. A.: Report of a Stillborn Child, breech extraction with true knot in umbilical cord, *National Elect. Med. Assn.* 11: 286, 1919.
36. McCormick, C. O.: Unusual Knot of the Umbilical Cord, *J. Indiana M. A.* 22: 245, 1929.
37. Mitchell, G. A.: A report of a case of intra-uterine asphyxia of the fetus at term due to a true knot in the cord, *Am. J. Obst. and Gynec.* 37: 342, 1939.
38. Morris, G. G.: Death of a fetus from knotting of the umbilical cord, *Med. and Surg. Reporter*, *Phila.* 40: 466, 1889.
39. McNally, H. B.: True knot of umbilical cord causing fetal death before labor, *Am. J. Obst. and Gynec.* 36: 156, 1938.
40. Oswald, R. J. W.: An unusual Condition of the Umbilical Cord, *Brit. M. J.* 1: 100, 1883.
41. Parker, E. W.: Case of knot in umbilical cord, *Boston M. and S. J.* 97: 28, 1877.
42. Pooley, J. H.: Knots in the umbilical cord, *Am. Med. Bi-Weekly* 12: 169, 1881.
43. Leidy, Philip: Knot in umbilical cord, *Med. and Surg. Reporter* 18: 402, 1868.
44. Nolan: quoted by Pooley.
45. Quigley, J. K.: Monoamniotic Twin Pregnancy, *Am. J. Obst. and Gynec.* 29: 355, 1935.
46. Sankey: quoted by Browne.
47. Simpson, A. R.: Knot on the Umbilical Cord formed during Pregnancy, *Obst. J. Gr. Brit. and Ireland* 6: 577, 1878.
48. Stern, W. C.: A hard knot in the umbilical cord, *Med. and Surg. Reporter Phila.* 39: 108, 1878.
49. Walker, T. R.: A Complicated and unique knot of the fundus, *Med. Herald, Louisville*, 5: 529, 1883.
50. Waters C.: Knots on the Umbilical Cord, *Am. J. Med. Sci.* 36: 358, 1845.
51. Wells, D. E.: Knot in the umbilical cord, *Boston Med. and Surg. J.* 96: 571, 1877.
52. Weston: quoted by Browne.
53. Zollickoffer, Wm.: Cases of knotting of umbilical cord, *Am. J. Med Sc.* 28: 109, 1841.
54. Mastin, C. H.: Intra-uterine stangulation death of a child in utero from a knot in the funis, *New Orleans M. and S. J.* 19: 460, 1866.
55. Bradley: True Knot on Cord, *Rep. Proc. Northumb. and Durham M. Soc. Newcastle upon Tyne* 1888-9, p. 171.
56. Holliday W. W.: Knot of umbilical cord, *Cleveland, M. M.* 5: 496, 1900.
57. Ahlfeld: Eigentümliche Knotchenbildungen an der Nabelschnur, *Arch. f. Gynaek. Berl.* 13: 164, 1878.
58. Angenstein, H.: Beobachtung einer natürlichen Knotenbildung in der Nabelschnur während des geburtsactes, *Org. f. d. ges. Heilk. Aachen* 5: 90, 1856.
59. Bartscher, L.: Strangulation des Fetus durch Knotung der umschlungenen nabelschnur, *Monatschr. f. Geburtsk. u. Frauenkr.* 17: 364, 1861.
60. Baudelocque: Sur les noeuds du cordon ombilical, *Rev. med. franc. et étrang. Par.* 3: 355, 1842.
61. Binaut: Noeud en 8 de chiffre du cordon ombilical ayant empêché le développement complet du fœtus, *Bull. med. du nord. Lille* 2: 304, 1861.
62. Canivet, R.: Note sur les noeuds du cordon ombilical et leur influence sur la vie du fœtus, *Ann. de gynec. Par.* 4: 268, 1875.
63. Comein: Observation sur un cas de nouure du cordon ombilical, *Ann. Soc. med. chir. de Bruges* 5: 62, 1884.
64. Feist, F. L.: Ueber wahr Knoten der nabelschnur, *N. Med. Chir. Ztg. Munchen* 1: 353, 1848.
65. Gery, E.: Observation de noeuds du cordon ombilical; arrêt de la circulation; mort du fœtus, *Union med. Par.* 22: 886, 1876.
66. Lepidi, G.: Aborto di un feto a cinque mesi per nodo nel centro del cordone ombilicale, *Morgagni Napoli* 12: 919, 1870.
67. Maurice: Accouchement d'un fœtus mort par suite d'un noeud dans le cordon, *Ann. Soc. de med. de St. Etienne et de la Loire* 5: 412, 1876.
68. Muller, P.: Ueber verschlingung und Knotenbildung der Nabelschnure von Zwillingfruchten, *Beit. z. Geburtsk. u. Gynaek. Wurzh.* 5: 31, 1869.
69. Nitzel; Nafuelstrung med. en verkleg knut, *Forh Svensk. Lak. Sällsk. Sammank Stockholm* p. 301, 1870.
70. Passot, P.: Note sur un cas d'asphyxie intra-uterine d'un enfant à terme causée par deux noeuds du cordon ombilical, *Gaz. med. de Lyon* 1: 93, 1849.
71. Piogey: Fœtus mort; vers le milieu du cordon existait un noeud gros comme une noix; au dessous il était exsangüé très gonfle au contraire audessus, *Bull. Soc. Anat. de Par.* 27: 176, 1852.
72. Regis: Observation sur une conformation extraordinaire du cordon ombilical qui a causé la mort du fœtus, *J. de Med. Chir. pharm. etc. Par.* 12: 135, 1860.
73. Saxtorph, M.: De funiculis umbilicalibus infantum vivorum nodo se complicatis, *Soc. med. Havn. Collect.* 1: 7, 1774.
74. Schlegel, J. H. G.: Wahrer Knoten des nabelstrangs ein fall, wodurch metzger's meinung heiruber widerlegt wird, *Mat. f. d. Staatsarznei w. prakt. heilk. meiningen* 9: 1, 1819.
75. Schreiber, C. A.: Wie und wann bilden sich sowohl die verschlingungen der nabelschnur um verschiedene Theile des fœtus als auch die wahren knoten in derselben, *Deutsche Klinik Berl.* 14: 367, 1862.
76. Aœte: Quelques reflexions sur les nouures du cordon ombilical, *Ann. Soc. med. chir. de Bruges*, 7: 43, 1846.
77. Thouret: Mémoire sur la compression due cordon ombilical ou examen de la doctrine des auteurs sur ce point, *Hist. Soc. roy. de med.* 1786 *Par.* 8 pt. 2: 38, 1790.
78. Tiedemann, F.: Zwey beobachtungen uber knoten und verschlingungen der nabelschnure bey szellengsgeburten, *Lucina Leips.* 3: 19, 1806.
79. Vigot, A.: Des noeuds du cordon embilical, *J. de med. de l'ouest Nantes* 17: 17, 1883.
80. Woets, A. B.: Cordon umbilical noue mort du fœtus, *Ann. Soc. med. chir. de Bruges* 3: 53, 1842.
81. Bernard, P.: Noeud du Cordon ombilical mort du fœtus, *Mém. et Compt. rend. Soc. de Sc. Med. de Lyon*, 31 pt. 2, 37, 1891-2.
82. Faidherbe, J.: Noeud du cordon ombilical, *J. de Sc. Med. de Lille* 2: 540, 1897.
83. Ferrari, T.: Un caso di morte di feto per nodo vero del cordone ombellicale e risultati di al cune ricerche sperimentale sui nodi che artificialmente si possono fare sui cordon ombellicali, *Gazz. med. lomb. Milano* 141, 1892.
84. de Lambarri: Un caso de nudo del cordon umbilical, *Rev. de med. y ciruj. de la Habana* 2: 144, 1897.
85. Leclef: Mort du fœtus par suite d'un noeud complet du cordon *Ann. Soc. de med. d'univers.* 43: 19, 1901.
86. Lefour, R.: Noeud du cordon ombilical mort du fœtus,

proved in the two cases of uncomplicated pellagra, their course in other cases tended to follow the course of the principal disease.

The following case summaries are given for illustration:

Case 3. This patient was a woman, aged 73, suffering from a depressed and agitated type of senile psychosis which had begun three months previous to admission. The general physical examination was essentially negative except for undernutrition, general arteriosclerosis and glossitis and stomatitis. The patient was given 120 mgs. of nicotinic acid daily, and in three days the lesions of the mucous membranes had entirely healed. The depression and agitation remained the same.

Case 4. This patient was a man 77 years of age, entirely deaf, and almost completely demented. His general physical examination revealed nothing noteworthy except general arteriosclerosis. There was a diffuse redness of the tongue with no atrophy of the papillae. The entire inside of the mouth presented a bright red, angry appearance. The patient was given nicotinic acid, 40 mgs. after each meal, and the mucous membrane lost its angry red appearance in four days, and appeared normal. There was no appreciable change in the general physical or mental condition of the patient.

Case 11. This patient was a woman, aged 48, suffering from a psychoneurosis. For several years she had suffered from fatigue, lack of appetite and insomnia. The patient had been unemployed of late, and although she had adequate income from property, she had become depressed and uninterested, and had eaten inadequately.

At the time of her admission, the patient had the complaints mentioned, and in addition she was rather hostile and suspicious, fearing she would be "doped" and her mail held. Physical examination revealed emaciation, glossitis, stomatitis and fiery redness of the vaginal mucous membranes.

The patient was given 100 mgs. of nicotinic acid after each meal, and the mucous membranes were normal in appearance within forty-eight hours. The suspiciousness and hostility improved, and the patient slept better. There was a gradual improvement in the other symptoms as a response to psychotherapy.

Case. 9. In this case (reported in more detail elsewhere)² the patient had had a psychoneurosis with anorexia nervosa for several years. She had allowed herself to become emaciated and her mucous membranes presented the pellagranous appearance. The patient on admission was completely disoriented, hyperemotional and violent. She was given 500 mgs. nicotinic acid daily and the mucous membranes healed in twenty-four hours and her acute mental upset cleared up entirely in three or four days.

COMMENT

In all of the cases the patients were adequately cared for financially, but because of the presence of a psychosis or a psychoneurosis, they had

eaten an inadequate diet and as a result had developed pellagra. In no case was there a classical picture of pellagra, but in all cases there were some of the physical signs and symptoms of pellagra and these promptly responded to treatment with nicotinic acid, the specific treatment for pellagra. In most cases the pellagra itself was only a complication of a major psychosis, and hence there was very little improvement in the psychosis itself as a response to nicotinic acid. In two cases, however, the mental symptoms promptly and completely cleared up when nicotinic acid was administered and so the diagnosis of pellagra as the principal disease was made in retrospect.

SUMMARY AND CONCLUSIONS

There probably are many cases of atypical and subclinical pellagra in the Chicago metropolitan area, as is evidenced by the finding of this disease in 13 of 205 cases admitted to a private sanitarium in this area. In all cases, the pellagra was secondary to, or coincidental with, a psychosis or a psychoneurosis. In all cases the physical symptoms of pellagra promptly responded to treatment with nicotinic acid. There was very little change in the mental symptoms in any except two cases and these cases had pellagra as the principal diagnosis.

33 South Island Avenue.

REFERENCES

1. Editorial: Relation of Nicotinic Acid to Human Pellagra, *J. A. M. A.* 109: 1203, 1937.
- Spies, T. D.; Cooper, Clark, and Blankenhorn: The Use of Nicotinic Acid in the Treatment of Pellagra, *J.A.M.A.* 110: 622, 1938.
2. Evans, V. L.: Pellagra with Psychosis and Minimal Physical Symptoms, case report *J.A.M.A.* 112: 1249, 1939.

FIBROIDS OF THE UTERUS

An Analysis of 300 Consecutive Patients Operated Upon by the Members of the Gynecologic Staff of a Large Charity Hospital

A. E. KANTER, M.D., F.A.C.S., AND A. H. KLAUANS, M.D.

CHICAGO

Certain etiologic and symptomatologic observations in patients with uterine fibroids have long been taken for granted by those of us who prac-

From the Department of Gynecology, the Cook County Hospital, and the Department of Obstetrics and Gynecology, Rush Medical College of the University of Chicago.

Read before the Section on Obstetrics and Gynecology of the Illinois State Medical Society, May 3, 1939, Rockford.

tice and teach gynecology. As yet these have not been clearly presented in the textbooks nor are they generally called to the attention of the practitioner. In order to have substantial verification of our observations, we took it upon ourselves to review the records of 300 consecutive patients operated upon by the members of the gynecologic attending and associate staff at the Cook County Hospital. From this study we are able to draw certain conclusions that may be of assistance in the diagnosis and treatment of uterine fibroids.

Age.—Many of us have felt that fibroids are a condition of middle life or the immediate premenopausal period. Our study shows that while this is somewhat true in white women, it does not hold for the colored race. Of the 300 cases reviewed, 230 patients were colored and 70 were white. In the colored women the average age was 35.2 years, while the white patient's average age was 42.1 years. The three youngest patients operated upon were all colored women, 22 years old. The youngest white woman was 31. The oldest of the colored women was 53 and the oldest white woman was 69. The greatest number of women in any single age group was in the 38-year old colored women, there being 24 in this class. The greatest number of white women was in the 42-year old class where there were nine patients. Going further into this analysis we find that 79.1 per cent. of the colored women were under 40 years of age and 50.3 per cent. were under 35. In the white group, 31.46 per cent. were under 40 while only 12 per cent. were under 35. These figures tell us, then, that fibroids are an affliction of the early or middle forties in white women and the middle thirties in the colored race.

Parity.—It has long been felt that fibroids go hand in hand with sterility. We know that sterility does occur as a result of fibroids because we have cured infertility by judicious myomectomy in selected patients. When we consider such factors as marital state, the frequency of salpingitis with fibroids (the salpingitis producing the sterility), and the great number of criminal abortions in the type of patient seen at the Cook County Hospital, we cannot draw any definite conclusions from the following figures: 63 patients (24.8 per cent.) had never been pregnant; 75 were primiparous; 53 had had two children; 23 had three children; 14 had four; ten had

five; seven had six; and nine had an increasing number up to 13. In 46 of the histories no parity was mentioned, so the above figures are based upon only 254 patients.

Size of Tumor.—The size of the tumor produced by the fibroids varied greatly, and the surprising proportions to which some patients allow a tumor to grow before seeking medical aid is interesting. One hundred and six of the records had no mention of the size of the uterus. Of the remaining 194, 17 were smaller than a one-month pregnancy, 20 the size of two months, 69 equalling a three-months' gestation, 62 a four-months' gestation, 60 at the level of the umbilicus, 38 the size of a six-months' pregnancy, 15 at the costal angles and the remaining 19 at the level of the xiphoid cartilage. It can be seen that with the intra-abdominal complications later mentioned, some of these tumors presented very interesting problems at the time of operation.

Symptoms.—It has long been our feeling that the symptoms in fibroids are the direct result of several factors. The location of the tumor with respect to the uterine cavity, the size of the tumor, the relationship of the tumor to adjacent organs, the coexistence of adenomyosis and hyperplasia of the endometrium, and the associated pathological findings all play a part. The occurrence of menorrhagia with fibroids has always been accepted as the outstanding symptomatic feature of this type of tumor. In this series 177 patients had menorrhagia while 123 did not. Of the 177 patients with menorrhagia 157 or 88.7 per cent. had submucous fibroids while 20 (11.3 per cent.) had only subserous and intramural growths. Of the 123 patients without menorrhagia 115 (93.4 per cent.) had no submucous growths while the remaining eight (6.6 per cent.) had some submucous myomata. This makes us feel that menorrhagia in association with fibroids is the result of location of the tumors plus the possible association with adenomyosis and endometrial hyperplasia rather than of the mere presence of fibroids.

Other symptoms complained of on admission to the hospital may be of interest: 53 (17.7 per cent.) of the patients had no complaint other than the knowledge of the presence of an abdominal tumor. Complaints of pain in the abdomen, dysmenorrhea, leukorrhea, bladder pressure with frequency and dysuria and constipation occurred frequently, either alone or in association with

each other or with menorrhagia and knowledge of a tumor.

Associated Pathological Conditions.—It has been said from time to time that fibroids are conducive to or associated with cardiac disease. In this series, 24 patients had histories or physical findings that might suggest heart disease; 13 of these had audible murmurs and 11 had histories of old heart disease. One of these women had an active myocardial degeneration with decompensation on admission to the hospital.

A surprisingly high total is found when we check on the number of patients in this group having pelvic inflammatory disease in association with the fibroids. One hundred and fifty-three of these women, or 50.5 percent, had evidence of chronic pelvic infection as detected in the presence of chronic salpingitis, tubo-ovarian abscesses, hydrosalpingitis or/and pelvic adhesions found at the time of operation.

Other conditions found in the patients with fibroids were bowel adhesions, infection within the fibroids themselves, pregnancy, ovarian cysts, omental adhesions, endometriosis, erosion of the cervix and pelvic floor relaxation.

Operations.—Because of the variety of complications encountered at operation, a number of different types of operation were of necessity resorted to. The operations performed in this group of patients may be tabulated as follows:

Supracervical hysterectomy	48
Appendectomy added in 16	
Supracervical hysterectomy with bilateral salpingo-oophorectomy	145
Appendectomy added in 28	
Complete abdominal hysterectomy with bilateral salpingo-oophorectomy	29
Appendectomy added in 2	
Supracervical hysterectomy with unilateral salpingo-oophorectomy	39
Appendectomy added in 12	
Supracervical hysterectomy with bilateral salpingectomy ..	7
Supracervical hysterectomy with bilateral salpingectomy and unilateral oophorectomy	18
Appendectomy added in 6	
Myomectomy	6
Appendectomy added in 1	
Vaginal hysterectomy	5
Dilatation and curettage	2
Radium insertion	1

Mortality.—In this group of operations there were 11 death (3.78 per cent.). A survey of these deaths with a study of their causes and the types of operations performed may be interesting and instructive.

There were five deaths resulting from peritonitis. Two of these women had supracervical hysterectomy with bilateral salpingo-oophorectomy and appendectomy for fibroids with

bilateral chronic salpingitis. Two others had supracervical hysterectomy with bilateral salpingo-oophorectomy, one for fibroids with bilateral salpingitis and the other for fibroids with a pelvic abscess. The fifth patient had a total hysterectomy with appendectomy for an uncomplicated fibroid.

Two patients died of postoperative shock. One of these had a total hysterectomy with bilateral salpingo-oophorectomy and perineorrhaphy for fibroids complicated by salpingitis and a relaxed perineal floor. The other patient had a supracervical hysterectomy with appendectomy for uncomplicated fibroids.

Two patients died as the result of cardiac failure after supracervical hysterectomy for uncomplicated fibroids. One of these women had a long history of chronic myocarditis while the other was acutely decompensated at the time of operation.

One patient died as the result of an intraperitoneal tearing of the bladder with urine extravasation, and one died of paralytic ileus. Both of these patients had had supracervical hysterectomies with bilateral salpingo-oophorectomy for fibroids with bilateral chronic salpingitis and tubo-ovarian abscess formation.

It is interesting to note that there was no death as the result of embolic phenomena which are supposedly common following hysterectomy for fibroids.

Morbidity.—Sixty patients (20 per cent.) had postoperative morbidity. The cause of the morbidity and the number of cases of each type follows:

Wound infection	35
Pelvic abscess or parametritis	10
Respiratory tract infections, including pneumonia	5
Peritonitis, generalized	2
Fecal fistula formation	2
Thrombophlebitis	2
Cystitis	1
Parotitis	1
Evisceration	1

DISCUSSION

A statistical study such as this brings out several features which warrant discussion and may be of value in aiding us in making a diagnosis and choosing an operation which would produce the best result. The factors of age, color and parity are of doubtful value if studied critically. The early age of appearance of fibroids in colored women has been common knowledge. An important point can be culled from an analysis of the age statistics. We have

long taught that bleeding from the vagina in the postmenopausal period is indicative of malignancy in the genital tract in about 65 per cent. of patients. Some of our colleagues have passed off many such cases as fibroids. The small number of such patients found in this series justifies our relegating fibroids to secondary consideration when faced with a postmenopausal bleeding problem.

From a survey of the figures on the size of tumor and the symptoms we learn a great deal. It has always been taught that there are three cardinal symptoms of fibroids, namely menorrhagia, dysmenorrhea and leukorrhea. This we have discovered very definitely, and we postulate that the symptoms of fibroids depend upon the location of the tumors with respect to their proximity to the uterine cavity, their encroachment upon adjacent organs, the existence of associated pathological changes and/or the size of the mass produced by the tumors.

In general it may be stated that regardless of the size of the tumor, menorrhagia, dysmenorrhea and leukorrhea only result when submucous fibroids encroaching upon the uterine cavity are present. The only addition we must make to this statement is in the cases where there exist coincidental adenomyosis uteri and endometrial hyperplasia. Since both of these conditions tend to produce menorrhagia and since in a previous study we showed that these conditions are present in about 60 per cent. of fibroid uteri, we might consider these microscopic entities as normal concomitants of submucous fibroids.

It is possible to have sizable tumors filling the entire abdominal cavity which, because they are subserous and intramural, produce no change in the menstrual function. Bladder symptoms are frequently associated with fibroids, but these only result when tumors are so situated that they press upon the trigone to produce frequency, urgency and dysuria. The diversity of conditions associated with the fibroids and the high incidence of pelvic inflammatory disease in this series can be explained when we consider the class of patient dealt with. Fortunately, the co-existence of these conditions is rather rare in the private practices of the majority of us.

Our final points in the discussion can be based upon the study of the types of operation performed and their relation to mortality. In all there were 65 appendectomies in this series. One

patient had a perineorrhaphy in addition to her gynecologic laparotomy. Of the 11 patients who died, five were in the above group. This puts about 45 per cent. of the deaths in the series of 66 patients mentioned above. Stated in another way, about eight per cent. of the patients upon whom multiple surgery was performed died, while the mortality for the entire group was 3.73 per cent. This tends to prove that the adding of an elective appendectomy or perineorrhaphy to an operation for fibroids doubles the chances for mortality.

May we end, then, with a plea that in the routine operation for uterine fibroids, elective appendectomy be not performed unless the appendix is involved in the pathological manifestations. By following such a practice we might hope, in the long run, to show a material reduction in our operative mortality on gynecologic patients.

CONCLUSION

1. Uterine fibroids are an affliction of the fourth decade of life in colored women and the fifth decade in the white race.
2. Parity has no demonstrable relation to fibroids. Sterility, absolute or relative, may be directly traced to fibroids of the uterus.
3. The menorrhagia associated with fibroids is dependent, in the main, upon the location of the tumors with respect to their proximity to the uterine cavity and the association with adenomyosis uteri and endometrial hyperplasia.
4. Elective appendectomy during the course of operations for uterine fibroids is to be considered only if the appendix is grossly abnormal or is involved in the gynecologic lesions.

310 South Michigan Avenue.

DISCUSSION

Dr. James Carey, Joliet: Dr. Kanter and Dr. Klavans are to be congratulated upon the extensive and thorough manner in which they have handled this subject.

In a rather large colored clinic at Northwestern an obscure symptom came to my attention which might not be classed as one. After interrogating a large percentage of patients who had fibromyomata of the uterus it was found that most of them complained of clots at the time of the menstrual period. I do not believe that is brought out in the textbooks. We know that normally menstrual blood does not clot. The only value of this symptom might be in the differential diagnosis of so-called functional uterine bleeding and very small submucous or the intramural types of fibroids.

Another thing which interests me particularly is the fact that the etiology of fibroids being so obscure—and with the more enlightened attitude or the light which has been thrown upon the subject—there might be some relationship between fibroids and the estrogenic factor. We do know that fibroids occur very seldom in the premenstrual life and seldom in the postmenstrual life. We have observed certain types of fibroids, usually not the pedunculated or intramural type, which apparently undergo a process of dissolution after the menopause, and also certain fibroids which increase in size during pregnancy. These two states are states of hyperestrinism. It is the hope that in the future quantitative tests may be perfected for the presence of estrogen and progestin in the blood, so that we may throw more light on the subject of etiology.

It is interesting to note in the series reported that we are advised not to remove the appendix. I believe that most gynecologists would be of the opinion that the appendix should be removed while the abdomen is open, unless it will jeopardize the life of the patient.

Bleeding after the menopause, even in the presence of fibroids, should be treated as carcinoma until proved to be otherwise.

Dr. Herbert Schmitz, Chicago: In 1936 I took the records of the Cook County Hospital for a period of the ten preceding years and made a study similar to that of Drs. Kanter and Klawans, on 3,129 cases which had hysteromyomectomies done at the County Hospital by the attending staff. I have a few of these conclusions here which I think may be of interest.

As to the radiologic treatment of myoma, I believe it is pretty well accepted that we divide myomas into four groups: the juvenile, under 18 years of age; those in the active menstrual period up to the age of 40; those in the age of the menopause from 40 to 55 years; and those over 55 years in the senile period. I do not believe that any gynecologist who is interested in irradiation advocates radiologic treatment of myomas in any group except the menopause group, with the one exception: a contraindication to the use of surgery. In the menopause age when a myoma with no other complication is discovered and the only symptom is bleeding, a curettage should be performed, and these patients recover in almost 98 per cent of the cases, so far as their symptom of bleeding is concerned. There has been no mortality in such treatment. If we can treat with x-ray in this group and avoid a mortality of from 0.5 to 2.5 per cent. I think radiation therapy has a place in the treatment of this condition.

As to the complications in our series of cases, there was chronic salpingitis in 834, hydrosalpinx in 118, tubo-ovarian abscess in 100 cases. The following table shows the complete list of all the associated pathologic conditions listed in the order of their frequency.

TABLE I

Chronic salpingitis	834	Pelvic endometriosis	1
Hydrosalpinx	118	Chondroma	1
Tubo-ovarian abscess	100	Sarcoma	1
Pyosalpinx	65	Anaplastic squamous cell carcinoma of ovary	1
Chronic pelvic peritonitis	61	Brenner tumor	1
Degenerated myoma	35	Gärtner's duct cyst	1
Intraligamentous myoma	20		

Dermoid cysts of the ovary	20	Bicornate uterus	1
Uterine pregnancy	11	Gangrenous appendix	1
Hematosalpinx	8	Retained stem pessary	1
Pelvic abscess	7	Missed abortion	1
Large simple cysts of ovary	6	Papillary cyst adenocarcinoma of ovary	1
Tubal pregnancy	5	Carcinoma of fundus	1
Placental remnants	3	Accidental tear of bladder	1
Placental polyp	3	Accidental perforation of rectum	1
Carcinoma of the cervix	2	Thrombophlebitis	1

Table II gives a complete list of the postoperative complications.

TABLE II

Wound sepsis	126	Parametritis	1
Postoperative pneumonia	9	Psychosis	1
Localized peritonitis	8	Acute pharyngitis	1
Pelvic cellulitis and abscess	8	Central nervous system syphilis	1
Vaginal hemorrhage	7	Accidental tear of bladder	1
Secondary wound suture	4	Erysipelas of back	1
Thrombophlebitis	3	Auricular fibrillation	1
Cystitis	3	Diabetes mellitus	1
Evisceration	2	Vesicovaginal fistula	1
Hematoma of wound	1	Bleeding from wound	1
Fecal fistula	1		

Reed and Bell's morbidity table shows a much higher percentage of femoral thrombosis than we had. The thing you must remember is that at the County Hospital we have far advanced and neglected cases. Our complications, morbidity and mortality will be higher than in private practice.

As for the 78 fatal cases in this series, the operations performed were: abdominal supracervical hysterectomy in five, abdominal supracervical hysterectomy, bilateral salpingectomy and oophorectomy in 71, abdominal supracervical hysterectomy with bilateral salpingectomy and unilateral oophorectomy in two. The cause of death in these cases was as follows: generalized peritonitis in 46.2 per cent.; surgical shock in 25.6 per cent.; secondary hemorrhage in 7.7 per cent.; pneumonia in 5.1 per cent.; embolism in 3.8 per cent.; uremia in two cases; toxic goiter in two cases; injury to bowel and peritonitis, one; evisceration, one; cardiac failure, one; meningitis, one; and ischiorectal abscess, one.

In studies done by other men the figures and percentages are quite similar. However, in a private service there are very few complications and a very low mortality, which is impossible to duplicate in the County Hospital where one has so many associated pathological findings.

In doing this work I wanted to know whether our mortality was in keeping with other large series; the Mayo Clinic has a mortality rate of 1.2 per cent., our series is 2.1 per cent., Reed and Bell 2.0 per cent. I feel that with the far advanced and neglected cases we have to treat at the Cook County Hospital we have a very excellent mortality rate.

Dr. Frederick H. Falls, Chicago: I have been moved to get up and discuss this paper because of the statistics quoted by Dr. Schmitz and Dr. Klawans from the County Hospital. I have been on the attending staff since 1910. Most of the time I have been actively associated with the obstetrical and gynecological service. If one operates upon a fibroid uterus in the County Hospital and the woman is colored, about 98 per cent. of the time you will find complications present. The

reason that these papers do not show more complications is because the histories made at the hospital are meager and in many cases the complications were not recorded on the history, so that a man going over a series of cases six years later will not find associated pathological conditions. However, if you are an attending man at this hospital and expect to operate upon 300 cases of fibroid and get complications in only 50 per cent. you will be mistaken. That is what makes the mortality rate high.

One interesting thing has happened in our service in the last two years which I have never heard mentioned before. Hand-running we have operated on five cases of fibroid with ectopic pregnancy as a complication. Now, all the ectopic pregnancies that are admitted are supposed to go to the obstetrical service, but about half are sent to us by mistake and opened up. So in five cases one after the other we found ectopic pregnancy associated with a fibroid uterus and, therefore, in the presence of fibroid with bleeding it is well to keep in mind the possibility of this complication.

We find a certain group of fibroids in the County Hospital that are poor operative risks. Enthusiastic associates go to the medical wards and find one with chronic nephritis who has a fibroid and that patient is transferred over to the gynecological service for treatment. Do we dare to give her a general anesthetic? Will it raise the pressure way up? To avoid this we have done two things: We have operated under local anesthesia and with morphine and scopolamine as a basal anesthetic given in two doses, one hour and one-half hour before operation. We use one per cent. novocain with four drops of adrenalin during the course of the operation. We have operated upon a large number abdominally and in addition we have removed a good many fibroids vaginally under local anesthesia and by morcellation we have removed fibroids half way to the umbilicus and we feel this is a thing that should be known and practiced more.

It is an important thing to remember that a fibroid represents a benign form of degeneration of the uterus but nobody knows when the benign form leaves off and the malignant form begins. Nor is it possible to say in a given case that a bleeding uterus means an associated carcinoma of the cervix or the body of the uterus. Therefore it is important to do a vaginal examination very carefully, remove tissue for examination and curette the patient, particularly in those women at the menopause or possibly past the menopause, to rule out the possibility of a carcinoma. One of the advantages of the vaginal operation is that it gets rid of the cervix and the possibility of carcinoma occurring in the cervical stump. In those cases in which the cervix is left in, we cauterize the endocervix and the cervix in order to destroy the epithelium from which carcinoma could develop.

The statistics quoted on fibroids and malignancies are frequently wrong. They are wrong for this reason: If a patient has a fibroid and it is removed and the patient re-enters the hospital with a carcinoma of the cervical stump, that goes in the statistics as a carcinoma of the uterus. No thought is given to the fact that that woman started out with a fibroid. If a

woman comes in with definite fibroid and somebody puts a speculum in the vagina and sees a carcinoma of the cervical stump, that uterus ceases to be a fibroid uterus but becomes a carcinoma. If a woman comes into the County Hospital with a fibroid and is operated upon for that and if the pathologist opens up the fibroid after it has been taken out and discovers a carcinoma, that goes down as carcinoma of the uterus and the fact that she had a fibroid is lost sight of.

When you are dealing with a fibroid always keep in mind the fact that the patient is a potential carcinoma patient.

Dr. G. B. Callahan, Waukegan: This subject has been presented in such volume that those of us who have gone out to the smaller towns to practice are overwhelmed. It was my privilege while at Cook County Hospital to have assisted in some of the 3,000 cases mentioned by Dr. Schmitz. I was sorry that more was not said about treatment as Dr. Klawans omitted his summary.

One of my senior medical schoolmates came to me one day with a letter that had come from a gynecologist in the south, saying that they had done a hysterectomy on his fiancée because of the findings of encroachment upon the cavity of the uterus. There had been a fibroid present for some time and, of course, we cannot judge from the meager history given whether she ever had a chance to bear a child had this surgeon only enucleated the fibroid. It did not sound reasonable to me that every uterus with fibroid should be removed where there were symptoms even of encroachment upon the uterine cavity. We do a cesarean section and cut all the way into the uterine cavity with a much larger scar than from a fibroid excision, and we send those patients home to have another pregnancy and another cesarean section. I did enucleations, allowing thereafter pregnancies, normally and safely. Many years later than my schoolmate's news I was pleased to hear one man say that in the child-bearing woman he enucleates the fibroid, makes the repair and allows her to bear children. This man, Mr. Victor Bonney of London, is of mature and wide experience, comparable to our own Dr. Barrett.

I would like to know whether all of these fibroids were removed by hysterectomy and not enucleated, because those of us on the outside never see your volume and we wonder what we should do for our patients.

The reason I raise such a question is because these reports in the literature give the surgeon support for choice of hysterectomy that might be avoided. Could we not wisely in suitable cases enucleate fibroids, repair the uterus, allow pregnancies, then observe for possible malignant changes mentioned by Dr. Falls and treat as indicated?

Dr. A. H. Klawans, Chicago (in closing): I am sorry Dr. Schmitz did not enumerate the number of appendectomies in that series of deaths.

In answer to Dr. Callahan we stated that infertility does occur as a result of fibroids. Also, we do myomectomies, but I must repeat for emphasis that our position at the County Hospital is different from

yours. In our patients there is a great amount of associated pathological conditions, so because of the salpingitis, tubo-ovarian abscesses, pelvic adhesions, and because these women cannot be pampered like our private patients and because these women must get out and work for their livelihood, we must do what we can to cure them. We could give them two years of treatment so that they could be operated upon and myomectomy done, but they are economically unable to go through such a long treatment period.

Dr. Carey spoke of routine appendectomy as if he were in favor of it. I think five years ago we did appendectomy routinely. Recently we have been looking at the appendix and if it is injected we take it out, otherwise we leave it in. I understand that at the Mayo Clinic they are no longer doing routine appendectomy, removing the appendix only where it is injected or involved in the morbid gynecologic conditions.

MULTIPLE UNILATERAL CRANIAL NERVE PARALYSES

Report of Two Cases Due to Suppuration in the Presence of Diabetes

THEODORE T. STONE, Ph.D., M.D., and

ALEX J. ARIEFF, M.D.

CHICAGO

Two cases of multiple unilateral cranial nerve paralyses are herewith reported because of several factors. These are as follows: the number of nerves involved, i.e., Case 1 and Case 2 have eight cranial nerves implicated; both cases occurred in young adults who have gross evidence of suppuration in the temporal, maxillary and sphenoid bones as well as nasal sinuses and have a severe diabetes; both cases were in deep coma and in a very serious condition; both cases received sulfanilamide and insulin and responded favorably.

REPORT OF CASES

Case 1. Abstract. A twenty-six year old male with diabetes mellitus went into coma two days after a tooth extraction. While being treated he developed paralysis of cranial nerves II to IX; all on the right side. A non-hemolytic streptococcus was cultured from his maxillary sinus and later from his draining ear. Although his diabetes was fairly well controlled and prontosil apparently controlling his infection, the bony involvement continued until a surgical petrositis developed. Following operative drainage the condition slowly healed. At the present time the palate is closed in with a plastic operation. Vision is gone from his right eye, but some lateral (abducens) eye motion is returning. Facial movements on the right side are

also possible but very limited. The II and III cranial nerves remain completely involved.

History. E. S., aged 26, a truck driver for the past two months was admitted to Cook County Hospital in a medical ward in coma, on August 3, 1937. His past history was negative with the exception of diabetes mellitus since June, 1937, when he developed loss of weight, weakness, polydipsia, polyphagia, polyuria and drowsiness. He was then put on a diet without insulin. Family history was negative except that his mother died of bronchial asthma at age of 53.

Two days after a tooth extraction he gradually went into coma and was sent to a hospital. While there, he was treated with insulin and intravenous fluids. He then developed paralysis of the right side of his face, ulceration of the roof of his mouth and severe headache. He was then admitted to Cook County Hospital on August 3, 1937.

Physical and neurological examination on August 4, 1937, revealed a comatose patient with acetonic breath. The temperature was 102.2°, pulse 120 and respiration 14. The right side of his face was flaccid and immobile. The left external auditory meatus was filled with wax and the right tympanic membrane was hemorrhagic and distended with a sero-sanguinous exudate. The left pupil was larger than the right and reacted to light and accommodation but not consensually. There was a paralysis of right lateral gaze. The right pupil was fixed to light and accommodation and reacted consensually. There was a ptosis of the right upper lid and a mucopurulent conjunctival discharge. The entire right side of the face was anesthetic to all forms of sensation. The periorbital tissues on the right side were swollen. There was no vision in the right eye. There was slight edema and blurring of both optic discs. A sero-sanguinous discharge exuded from the right nostril. Sordes were present on the lips. The right hard and soft palate were sunken, retracted and black with greyish edges. The throat contained a greyish exudate. Swallowing of both liquids and solids was difficult. The neck was markedly rigid. Cervical glands were palpable bilaterally. There were occasional rales in the apex of the right lung. A systolic murmur was heard at the apex of the heart but otherwise the tones were regular and normal. In the abdomen the liver was just palpable. Three days later examination revealed a complete areflexia but no paralysis of the extremities. The II to the IX right cranial nerves were completely paralyzed and the XI was questionably involved. Laryngeal examination was normal. There was a slight rotatory nystagmus to the left on vertical gaze.

Laboratory examination revealed: four plus sugar, acetone and diacetic acid in the urine. Spinal fluid examination revealed a turbid fluid: four plus Pandy and 450 polymorphonuclears per cmm. There was no block and no organisms were present on smear or culture. The blood culture was negative. The white blood count was 20,650 of which 79 per cent. were polymorphonuclears. A hemolytic streptococcus was cultured from the maxillary sinus and from the draining ear. A streptococcus viridans was cultured from the mastoid. All other laboratory tests were normal.

From the Department of Nervous and Mental Diseases, Northwestern University Medical School and the Cook County Hospital, Chicago.

Course. Repeated spinal punctures were performed and the diabetes was controlled with insulin, 60-70 units per day, and diet. The otitis media and maxillary sinusitis were treated locally. Although the patient improved subjectively, he still showed a low grade fever in spite of 49 grams of sulfanilamide given from 8/7-8/30/37. The palate sloughed out gradually and on September 16 he was transferred to the Ear, Nose and Throat Ward. Here he received 12 grams of sulfanilamide from 9/16-9/26/37. The spinal fluid at this time showed a four plus Pandy and 900 pus cells. The left fundus and visual field was normal. On September 24, the right mastoid region became tender and roentgen examination revealed bone destruction in the squamous portion of the temporal bone. Spoken voice returned to the right ear. Alcohol was introduced into the right external ear and it appeared in the right pharyngeal cavity, indicating a fistula at the base of the temporal bone. An exacerbation occurred and the diabetes became uncontrolled. The spinal fluid on September 25 showed 15,000 polymorphonuclears. On September 28, a right mastoidectomy was performed and a large abscess in the petrous portion of the temporal bone was drained. From then on the temperature dropped and the patient did well. Within two months hearing increased in the right ear and pain sensation increased in the second and third divisions of the V cranial nerve. On December 28, the fistula extended from the sphenoid sinus at the base of the skull into the ear and was well rounded, clean and practically free of drainage. The right maxillary sinus was pus free. The right ear still continued to drain but the mastoid wound had healed. At this time the right II, III, IV, VI, VII, and IX cranial nerves were completely involved while the right V and VIII cranial nerves were only partially involved.

He was discharged from the hospital February 4, 1938, five months after admission, afebrile and with his diabetes controlled. The palate had been filled in by means of a plastic operation. At this time a neurologic examination showed complete blindness in the right eye, loss of all motion in the external ocular muscles of the right eye except for some lateral movement, ptosis of upper lid and limited facial movement. Sensation over the right face (V) had returned.

Case 2. Abstract. S. T., a white adult female, thirty-five years old, was admitted to a medical ward in diabetic coma. After relief of the coma she developed a gradual paralysis of II to IX (inclusive) cranial nerves on the right side. Headache was severe and right sided. Signs of suppuration gradually appeared in the maxillary and sphenoid sinuses and finally localized as an osteomyelitis of the temporal, maxillary and sphenoid bones. Hemolytic streptococci were found in the maxillary sinus. Mastoiditis and erysipelas developed. The mastoiditis required surgical therapy. Although prontosis seemed to control the infections, the bony portions required drainage because of actual pus. At the present time, the right eye is blind and there is still a complete paralysis of the right III, IV, V, VI, VII and IX cranial nerves together with a partial VIII on the right side. Sulfanilamide was used for a period of about two months intermittently (61 grams).

History. S. T., a white adult female, thirty-five years of age, was admitted to the Cook County Hospital in coma on October 10, 1937. Her history obtained later was essentially negative except that she was a diabetic and had been taking insulin for five years. She had been married twice and had one son. Physical and neurologic examination revealed a comatose patient with an acetonic breath. The temperature was 98.6, pulse 100 and the respirations 28; the blood pressure was 70/40. Her eyeballs were softened but the pupils were normal; the tongue was coated and the throat was red; there was no neck rigidity; the heart and lungs were normal; neurological examination was negative; multiple needle marks were present on the upper extremities; the urine had a specific gravity of 1.020, two plus albumin, four plus sugar and four plus acetone. The diagnosis of diabetic coma was made and treatment instituted with gastric lavage, fluids, alkalies and insulin.

Course. On October 11, 1937, she was out of coma. Within a week she had been controlled properly with insulin up to 55 units per day and was placed on a diet preparatory to being discharged. She then began to act peculiarly, i. e., irritable, uncooperative, disturbed, and on October 19 developed a diplopia and complained of severe headache. Examination revealed a swelling of the right eye with a right lateral rectus palsy. She complained of a burning and numb feeling on the right side of her face and this was soon followed by anesthesia over the right face. The right motor fifth gradually became paretic. Within the next three days, October 22, 1937, the right III to IX cranial nerves (inclusive) were paralyzed with the exception of the ophthalmic division of the V and VIII cranial nerves. Herpes Zoster had also developed on the right side of the face in the distribution of the first and second divisions of the V nerve. Her temperature rose to 102°. The left pupil was larger than the right and both reacted well to light, accommodation and consensual reaction. The cervical glands were tender on the right. The right infraorbital region was tender and swollen. The hard palate on the right side showed signs of ulceration. The soft palate deviated to the left. There was a moderate right exophthalmos. Fundus examination was normal at this time. The findings were compatible with a possible sphenoiditis and the patient was transferred to the Ear, Nose and Throat Ward. Three days later, on October 26, an optic neuritis developed with an occlusion of the central artery. The disc was pale and edematous, the veins were indistinct and arteries were not seen. There was a suggestion of cervical rigidity. At this time a spinal fluid examination showed no abnormalities.

Pus exuded from the right maxillary and sphenoid sinuses. Occipital headache which was complained of was relieved when the sinuses were irrigated. A foul purulent discharge developed in the right nostril. The right canine fossa appeared full. The right infraorbital area became more indurated and finally fluctuated on November 8, 1937. On the next day, November 9, bony sequestrae were removed from the olfactory sulcus in the sphenoid region to facilitate drainage.

The right middle turbinate was also removed. Although the patient felt better, she continued to have a low grade fever up to 101° . In hearing tests, the Weber did not lateralize while the Rinne was positive on the left and the whispered voice was better on the left. Small fistulae developed in the right periorbital and infraorbital regions which continued to drain intermittently. The temperature again began to rise and a right temporal and parietal headache developed which radiated to the right ear. Another fistula developed lateral to the right upper third molar leading into the antrum. Culture from the antrum revealed hemolytic streptococci. Swelling and tenderness appeared in the right temporomandibular joint and fluctuation appeared over the zygoma which opened and drained, the fistula also leading into the antrum. The right ear was now draining. The patient gradually felt better and the swellings subsided. Examination on March 3, 1938, revealed a complete paralysis of the II to VII and a paresis of the VIII and XI cranial nerves on the right side. The right facial nerve gave a questionable contraction only to an increased galvanic current.

On March 22, 1938, she developed pain in the right mastoid region with a temperature of 104° . A mastoidectomy was performed and the symptoms were relieved. A week later an erysipelas developed which was relieved by prontolyn.

From October 26, 1937 to April 25, 1938, the patient received a total of 209 grams of prontolyn. The patient then made a gradual recovery with the exception of the above cranial nerve palsies. She was discharged on June 9, 1938, eight months after admission into the hospital. The pertinent laboratory findings were as follows: blood sugar 475 mgm.; hemolytic streptococci in the maxillary sinus, face and ear; x-ray showed, on December 9, 1937, erosion of the superior wall of the right maxillary sinus and on March 16, 1938, opaque maxillary, ethmoid and frontal sinuses on the right side with clouding of the right petrous tip and right mastoid. All other tests were normal. Additional Data on Case 2, S. T.

From June 9, 1938, the time of her discharge until September 8, 1938, when she was readmitted to a medical ward for the purpose of readjusting her diet and intake of insulin, she was seen in the clinic. Two weeks prior to her second hospital admission she discontinued her diabetic diet and stopped taking insulin. While in the hospital (second admission) she gradually developed acidosis and coma. Despite all therapy she died nine days later on September 17, 1938. Post-mortem examination done three hours after death showed the following macroscopic findings: early abscess of right temporal lobe with rupture into the subarachnoid space; thrombosis of right lateral sinus; chronic osteomyelitis of the right sphenoid bone; chronic atrophy of the pancreas; focal pneumonia of right lower lobe and chronic ulcerated keratitis of the right eye. The essential microscopic findings were as follows: focal encephalitis with small focal abscesses of right temporal lobe with a poorly defined capsule formation; considerable perivascular round cell infiltration in the regions of the poorly defined capsule; marked thickening of the meninges with cel-

lular infiltration where the polymorphonuclear and gitter cells have broken through into the subarachnoid space adjacent to the abscesses in the temporal lobe; the brain parenchyma around the abscesses show acute degenerative cellular changes with marked infiltration of the Virchow Robin space of the blood vessels.

COMMENT

Multiple unilateral cranial nerve paralyses occur rather infrequently. This is especially true when seven or eight nerves are involved. Unilateral paralysis of all the cranial nerves from the first to the twelfth may occur in pyogenic basal meningitis, syphilitic basal meningitis, malignant meningeal intracranial neoplasms (melanoma, carcinoma lymphoma, and choroidoma) and cerebral meningo-radculitis. Multiple unilateral cranial nerve paralyses are liable to occur from lesions implicating those regions of the cranial base where two or more cranial nerves are grouped together. The following groups have been previously described: 1. Sphenoidal fissure or syndrome of the orbital space involving the II, III, IV, ophthalmic V and VI cranial nerves; 2. Cavernous sinus syndrome involving the III, IV, VI and occasionally the ophthalmic division of the V cranial nerves; 3. Syndrome of the outer wall of the petro-sphenoidal fossa involving the II, III, IV, V and VI cranial nerves; 4. Syndrome of the apex of the petrous portion of temporal bone producing a gasserian ganglion and abducens involvement; 5. Syndrome of the internal auditory meatus resulting in a paralysis of the VII and VIII cranial nerves; 6. Syndrome of the jugular foramen resulting in involvement of the IX, X and XI cranial nerves; 7. Retroparotid syndrome resulting in paralysis of the IX, X, XI and XII cranial nerves and cervical sympathetic. There are several other possible combinations of multiple unilateral cranial nerve paralyses.

In our two cases there were eight cranial nerves involved in each instance. Both cases had not only a severe diabetes but a marked pyogenic infection of the mastoid, temporal and sphenoid bones as well as a frontal, sphenoid and maxillary sinusitis. It is apparently easy to realize why so many cranial nerves were involved in our cases because all of the right anterior, middle and a portion of the posterior fossae were involved. The diabetes was without doubt the predisposing factor for such a massive inclusion of the eight cranial nerves. This was particularly brought out in Case 2, where a recovery

from the active infectious process had taken place, but when the patient neglected her diet and stopped taking insulin, the infection became active again and produced multiple abscesses, suppurative encephalitis and meningitis. We believe that sulfanilamide was the drug which prevented death in these two cases. Previous to the administration of the drug and despite the fact that the diabetes in each case was very well controlled, their general condition was grave because of the overwhelming infection. It can be said that sulfanilamide decreased the invasive capacity or virulence of the streptococci found in our cases. These two cases are presented as additional evidence of the therapeutic value of prontosil or sulfanilamide.

SUMMARY

1. Two cases of multiple unilateral cranial nerve paralyzes (II to IX cranial nerves inclusive on the right side) with diabetes and supuration are presented.

2. Both patients recovered from the overwhelming infection with prontosil or sulfanilamide, surgery and control of the diabetes.

3. The second patient died subsequently of a reinfection with suppurative encephalitis and focal abscess formation. The latter probably was due to neglect of her diabetes.

30 N. Michigan Ave.

WHAT CONSTITUTES A PSYCHIATRIC PROBLEM IN GENERAL PRACTICE

FRANCES HANNETT, M.D.

Psychiatrist, Health Service, University of Chicago

and

MAXWELL GITELSON, M.D.

Chief of Staff, Institute for Juvenile Research

CHICAGO.

Psychiatry in the past has been considered the stepchild of medicine. Doctors in their medical training were careful to sidestep the subject, and even today in the medical schools we still find great resistance on the part of the faculty and student body to an adequate teaching program. It is only within recent years that psychiatry has been given any recognition, but where it has been recognized, it has been expanding and showing development. In the beginning this

branch of medicine was concerned almost exclusively with the care of the insane and with certain court cases, but it has developed now to include the treatment not only of the clearly defined neuroses, but also the organic-appearing problems which have previously been the exclusive concern of the internist and surgeon.

Before the days of Hippocrates the brain or "soul" was divorced from the soma. Hippocrates was the first to call attention to the fact that they had to be considered as a unit, and that, "from nothing else but the brain come joys, despondency and lamentations." During the Middle Ages this body-mind unity was lost sight of, not to reappear until Sherrington and Cannon laid the groundwork experimentally for the concept of a total organism with integrated functions. Sigmund Freud in Vienna and Adolph Meyer in America developed concepts of personality which integrated organic phenomena and functions of the organism with those of the so-called mind. Today we no longer speak of the body and mind as independent variables. They are each of them manifestations of a single continuous process.

To give some idea of what has been happening in this respect we would cite Dunbar's book, *Emotions and Bodily Changes*, published in 1935, in which she reviews 2,251 articles and books published between 1910-1933 dealing with psychosomatic interrelations; while, only this month, a new periodical entitled *Psychosomatic Medicine* has made its appearance. The editorial board of the latter includes psychoanalysts, psychiatrists, internists, physiologists and psychologists.

All this may serve to indicate why psychiatrists cannot and do not disregard various dysfunctions, disorders and organic changes of the body and why to psychiatrists it seems highly necessary for the internist, surgeon, pediatrician and gynecologist not to disregard the emotional or so-called mental symptoms in organic disease. Bryan has classified physicians into three groups with respect to their attitude towards emotional phenomena in their patients:

1. Those who have the idea that all psychic manifestations are of organic nature; i.e., the pure organicists;

2. Those who have the idea that all psychic manifestations are purely psychological and are no concern of the physician;

3. Those who have the idea that all psychic manifestations are both organic and psychological in such terms as have already been discussed.

If the fact of the syphilitic infection were alone sufficient to explain the manifestations of general paresis, how would we account for the other facts that some paretics show depressions, some grandiose ideas, some simple dementia, and some only a mild neurotic picture? In each instance the infection is the spirochete but in each case we are dealing with a different psychosomatic integration with a different life history in respect to everything except the luetic infection and the result is a different picture of the disease. The same could be said of delirious states in various febrile conditions.

Doctors would be saved much of their complaining about quacks, faith healers, etc., if they were always as ready to investigate the emotional problems of the patient in the interest of his general health as the "irregulars" are ready to exploit them for their personal profit.

The principles operating in somatic and psychological medicine are not so different as they may seem on the surface. Wm. A. White used the following example as a demonstration of this point: he compared the increased leucocyte count, as a defense reaction of the tissue to infection, with certain delusions which serve a similar function at a psychological level. If we take the case of an elderly man whose failing memory and increasing inability to concentrate cause him to make errors in his work, he will, when called to task about it, believe that the mistakes have been made by his enemies who wish to discredit him. This delusional idea protects him from recognizing his own failing powers. One defense (the white blood count) serves the integrity of the body; the other, the integrity of the individual's concept of himself.

The trend in medicine as a whole has been away from general practice towards specialization. This has its advantages in that one may be a better nose and throat therapist but at the cost of being a less reliable diagnostician of acute abdominal conditions. Medical knowledge has increased so rapidly as to make it almost impossible to be a good "Jack of all trades." But this trend has the disadvantage of segmenting the patient into liver, gall-bladder, tubes and mastoids with the mind as a foreign body, which unfortunately cannot be ignored or resected. The

patient as an entire personality is lost sight of. In contrast to this general trend toward specialization psychiatry is beginning to see the need for a more integrated approach to the patient; to see him as an entity. Psychiatrists have been criticized for their reluctance to examine their patients from head to toe and the usual criticism hurled is that they have forgotten to be doctors. This is not the case, for any competent psychiatrist will first want to be certain about the physical health of his patient and will take the necessary steps to do so. It must be pointed out here that the psychiatrist usually finds it advisable to have the medical examination made by another physician particularly if psychotherapy is being contemplated. The reason for this roundabout procedure is that in certain instances the emotional problems involved are such that treatment is jeopardized by the too intimate contact necessary during a complete physical examination. Perhaps, as Menninger has pointed out, part of the misunderstanding between medicine and psychiatry may be laid at the doorstep of the psychiatrists who have not always remembered that they were doctors first and psychiatrists afterwards, and that they must speak to their fellow physicians in a common language and not in psychiatric jargon. Perhaps, too, if psychological factors in disease had not been made the basis of a so-called religion, one of the tenets of which is that all doctors, other than psychiatrists, were wicked, physicians might not have been so slow to acknowledge the validity of psychiatry.

On the other hand doctors are unable to accept the notion that without definite experimental laboratory proof, emotional factors can cause disease. This insistence upon laboratory proof can also be looked upon as a species of religion. Nevertheless, no one of us hesitates to accept the validity of the idea that emotional factors can cause such bodily changes as blushing with embarrassment, gooseflesh and diarrhea with fright or anxiety, and various types of physical response to sexual stimulation. It is but a step further to see the relationship between emotional disturbances and hyperthyroidism, angina pectoris, ulcer, etc. For the strictly experiment-minded it may be comforting to know further that recent laboratory work on the hypothalamus and with the electro-encephalograph is beginning to elucidate some of the more fundamental

questions of interrelationship between psyche and soma.

So far we have outlined only the need to see the relationship of physical and emotional factors in disease. Now what is a psychiatric problem? By definition psychiatry is that branch of medicine which deals with the investigation, diagnosis and treatment of disturbed personality functions. Such a definition is not very specific, for much depends on what is meant by a "disturbed personality." Of course, there is little question about the major psychoses or the frank cases of hysteria, obsessional neurosis, and anxiety neurosis. But it is difficult to say what should be considered a personality disturbance. Broadly we can state that all factors which interfere with the individual's sense of security in himself and in his relationships with others produce to a greater or lesser degree a disturbance of the personality. It is this insecurity which constitutes the disturbance of the personality. It must be remembered that insecurity only seldom becomes manifest in pure culture, to be recognized as such. More often it appears, as various distortions of conduct, thinking and feeling whose purpose can be discovered as the concealment of the insecurity from the self and from others. The elderly man already cited is an example of this.

The question still remains how disturbance in personality can manifest itself organically. Examples may be helpful at this point.

In certain states of insecurity the individual tends to react defensively with anger, which anger however, for the very reason of the insecurity, cannot be expressed. Imagine a man resentful of his inferior status expressing even justified anger towards the superior on whom his job depends. Chronic suppression of such reactive anger may have as one of its consequences chronic vasomotor stimulation with so-called essential hypertension as the final diagnosis. In such instances the hypertension is the final manifestation of the personality problem.

Recently extensive psychiatric study of cases of peptic ulcer, colitis, constipation and diarrhea, asthma and endocrine disorders have been made. While not all the data is as yet published, there is evidence which points to a distinctive personality structure for each type of physical disorder. Suppose we take the instance of gastric ulcer. It is a well established clinical fact that many

ulcer patients are tense, go-getting, efficient, aggressive, high pressure types of individual who give the outstanding impression of being self-sufficient. As one of the etiologic factors of ulcer, the role of nervous tension is given serious consideration among a number of other possible causes or contributing factors. On close psychological investigation it is found that the so-called nervous factor is really a conflict in the patient between his aggressive self-sufficiency and an underlying insecurity which has attached to it desires to be cared for, supported and loved. In other words, the individual's personality disturbance on the psychological level manifests itself in a manner which denies the patient's insecurity to himself and to the world, while his organic symptoms proclaim his insecurity as a child chronically threatened by hunger. In such cases the childish insecurity and need to be cared for seems never to have been overcome but can express itself in the physical language of unsatisfied hunger. This psychological factor in the etiology brings about a chronic state of gastric stimulation with attendant hypermotility and excessive gastric secretion which then become the direct physiological factors in the causation of ulcer.

Now what symptoms may be considered to have emotional significance? In general the answer would be similar to the one Osler gave with respect to syphilis: "to know syphilis is to know medicine;" to know psychology is to know medicine. Blisters have been raised by suggestion and warts have been cured by suggestion. But there are certain symptoms which are more common than others in relation to disturbances of personality.

Prominent are the cardiac symptoms: palpitation and tachycardia with or without precordial oppression, and sometimes hyperpnea. In the absence of demonstrable pathological changes or toxic factors the symptoms are to be considered functional in nature and in most instances will be found in association with anxious thoughts and feelings. One of us has recently seen a patient with the above symptoms which were first diagnosed "angina pectoris or coronary disease." The history is as follows:

Further investigation revealed no organic pathological findings. However, the patient was convinced that he had coronary disease, and prepared himself for death. After a year of psychotherapy he was much improved in health, was carrying out a full-time work program,

and was no longer making reference to his illness. The psychological background was discovered to be intense hostility towards his father whom he had striven to emulate professionally and who had died of coronary disease at the height of his career. The patient was unable emotionally to separate his father's success which he coveted, from the apparent outcome of that success—heart disease. One might say that for this patient the wages of success were death by heart disease, since success meant competition with his father.

The gastrointestinal tract is astonishingly susceptible to emotional disturbances. Changes in secretion, motility, and gastric rhythm may be seen. We have already given one instance in which emotional factors operate hand in hand with the organic ones—gastric ulcer. Since 1880 nervous indigestion has been considered a functional disorder. Charcot in the late 19th century was famous for the diagnosis of colitis, the fashionable nervous disorder of the day. Axel Munthe describes this well in his book, *The Story of San Michele*. We must not forget that Charcot recognized colitis as functional in nature, yet he was the leading organicist of his day. Sialorrhea, polydipsia, bulimia, anorexia, nausea, vomiting, constipation, diarrhea, abdominal cramping—all these may also be manifestations of emotional disturbances. For instance: a recent history of constipation, especially if subjective ideas of serious illness are associated with it, must bring into consideration the possibility of the existence of a serious depression as well as the usual differential diagnoses of organic pathology. Anorexia may also be associated with depressions or anxiety states. Following are cases in illustration:

A young woman of 19 was referred for attacks of morning nausea and vomiting, frequent stools and lower abdominal pain. She had had three admissions to the hospital with attendant improvement only to relapse immediately on discharge. Organically she was sound. Psychiatric study revealed that she was preoccupied with ideas of impregnation which was both desired and rejected. Four weeks later she had her first hysterical convulsive seizure which inaugurated another attack of vomiting and anorexia. The periods between attacks were entirely free from any symptoms. This patient had been under medical investigation a number of years before emotional problems were suspected.

Another case is that of a brilliant young man of 23 who has been complaining for four years of a multitude of physical symptoms. The patient had a deprived childhood. He had lost his own mother when about a year old. His father had remarried but deserted the family periodically, leaving the patient with a not too kindly step-mother. Since the death of the

father five years ago, the step-mother has had no contact with the patient and writes him only indifferent, infrequent letters. He has no other family ties. He has financed his way through school by working and earning scholarships. His illness began in his junior year of college when he became increasingly disturbed about his constipation. He was examined medically and the findings were negative. Some time later he began to have vague discomforts in the region of the heart which he interpreted as beginning signs of heart trouble. This idea was followed by vague gastrointestinal symptoms which he felt were a sign of cancer. Examination at this time revealed no pathological organic condition of any kind. He was reassured and felt fairly well during the next year at school. During the year preceding his coming to Chicago his symptoms became increasingly severe, and the attacks more frequent. En route to Chicago he was disturbed, felt that he would not be able to do the caliber of work at the University which he wanted to do, was depressed and contemplated suicide. On arriving here he came into the clinic asking for help with his constipation and his abdominal cramping, these being the prominent symptoms at that time. Physical examination was again negative and he was referred for psychiatric study. He was seen to be a very tense person with marked feelings of inadequacy and great apprehension for his accomplishment at the University. He had tried to solve his conflict through religion but was unsuccessful. His symptoms fluctuated from being vague discomforts to severe preoccupations about serious and incapacitating illnesses. They were always worse when he had to meet some outside situation which was difficult, or when there had been some misunderstanding between himself and his friends. The investigation of his generally tense attitude revealed chronic resentment towards his difficult lot. Every acute difficulty in his life accentuated his resentment which reflected itself in gastro-intestinal spasm.

In the genitourinary and gynecological fields we see enuresis, cystitis, nonspecific urethritis, polyuria, impotence, frigidity, dyspareunia, dysmenorrhea, amenorrhea, sterility, functional bleeding, vague pelvic distress, etc., all of which may be due to either organic or psychic causes. It is a matter of general observation that enuretic girls are likely to be aggressive and tom-boyish; while enuretic boys are apt to be passive, intimidated youngsters. Psychotherapy, which deals with emotional problems which on the one hand sissify boys and on the other, masculinize the girls, succeeds simultaneously in eliminating the enuresis though this symptom is not directly treated. It is obvious from this that the symptom must be related to the problems of the personality and this is actually seen to be the case when we know the details of the developments during psychotherapy.

It is a frequent occurrence that after years of sterility pregnancy ensues shortly after the adoption of a child. All of us have encountered cases of amenorrhea in the newlywed which was not caused by an actual pregnancy but which was psychologically related to either a fear or a wish for pregnancy. Recent studies have indicated a marked parallelism in the variations of the psychological attitudes of the female towards her sexuality and the several phases of the ovulation cycle. Polyuria is frequently an anxiety symptom and cases of diabetes insipidus must be scrutinized for possible psychopathology.

Recently one of us treated a case in which the chief presenting symptom was a peculiar throbbing sensation in the region of the clitoris. This was being treated unsuccessfully by the insertion of vaginal tampons by the family physician. It turned out to be a masturbation problem with many other emotional implications and yielded only to prolonged psychotherapy.

Impotence in the male is often treated by the passage of sounds and by prostatic massage on the assumption that there is something wrong with the ejaculatory ducts but most cases of impotence are of psychological origin. In many instances fear is the chief obstacle and reassurance may be all that is required, though it must always be remembered that there are more severe types of cases.

In obstetrics there is a growing conviction that hyperemesis gravidarum is largely functional in origin and certain cases of eclampsia are under suspicion.

The case can be cited of a patient who during her first pregnancy was threatened with the need of a therapeutic abortion because of the severity of her symptoms. The consulting obstetrician in his interview with the patient asked her the simple question, "Do you really want your baby?" The patient's response, somewhat angrily, was, "Why of course, I do." The symptoms disappeared. It is obvious from the patient's response that the consultant's question had hit the mark. She was discovered in her rejection of the pregnancy and her pride could not tolerate this. She recovered from her symptoms as a substantiation of her denial of the rejection. This is a relatively simple case but it is an index to the fact that the emotional attitudes of the patient cannot be forgotten in any case.

For many women parturition constitutes a threat of death and is the reason for their fear of pregnancy. The popularity of "twilight sleep" has to do with this extreme anxiety. In some instances the birth of a child is so full of

disturbing meaning to the patient that the only solution for the conflict is the postpartum psychosis. Reactions like this are frequently mistaken for toxic exhaustive deliria but actually many of them are schizophrenic episodes which in some cases develop into chronic mental disease.

In the ear, nose and throat field aphonia and dysphonia are interesting symptoms. In the absence of possible physical causes such as pathological manifestations of the recurrent laryngeal nerve, bulbar palsy, myasthenia gravis and local lesions of the vocal cords, hysterical causes must be thought of. Sometimes mutism is mistaken for aphonia and this symptom may be the presenting one in a developing schizophrenia.

Beginning paranoid symptoms in a middle aged or elderly person might be adequately treated if it were discovered that the hearing was failing and proper measures such as lip reading instruction or mechanical hearing devices, were employed.

Telescopic fields of vision and sudden complete blindness are strongly to be suspected as of hysterical origin. Blepharospasm, ciliary spasm and some cases of muscular imbalance, in the absence of other findings, are also suspicious.

In dermatology emotional factors are very important and may contribute to disorders as simple pathologically as dermatographia, or as complicated as psoriasis and lichen planus. Pruritus, urticaria and neuro-dermatitis are some of the more common neurotic manifestations seen in a dermatological practice. It is significant that in Dunbar's book, 37 pages are devoted to abstracts of articles on skin disorders of psychic origin. The appearance and disappearance of psoriatic lesions is closely connected with the fluctuations in the emotional state of the patient.

In illustration is the case of a woman whose lesions appeared with each attack of depression and disappeared with the depression when the latter was replaced by the intervening obsessional neurosis.

As mentioned previously detailed psychological investigations now are being made on the problems of asthma and hay fever. There is reason to believe that psychic factors are importantly related to the special sensitivities of the patient. Moos reports 16 cases of asthma in which the typical symptoms of asthma as well as the laboratory findings of Charcot Leyden crystals and Curschmann spirals and increased eosinophilia were lost under psychotherapy. The general statement might be ventured that in these

conditions both allergic and psychic factors are responsible and that the two factors have a complementary relationship in producing the symptoms. That is, the greater the allergic factor the less emotional disturbance is needed to precipitate an attack and visa versa. This really touches on a central feature of the physical manifestations of neurosis, namely, that the neurotic symptom tends to express itself by way of an organ or tissue which is organically susceptible.

All who specialize in surgery recognize the great importance of psychological factors, even in those cases in which there is no doubt of the surgical changes. It is this factor which intuitively the surgeon is considering among others when he speaks of preparation for surgery in its broadest sense and when he is searching for the cause of a collapse following an uncomplicated operation.

As recently as ten years ago the unquestioned treatment of thyroid over-activity was removal of the thyroid gland after suitable preoperative preparation. Today the situation has changed and it is only after considerable deliberation that thyroidectomy is recommended. This change has come about as the result of postoperative observations that in many cases there is a recurrence of the very symptoms for which operation was originally recommended. In some instances second operations were followed by the same results. Such cases under psychotherapy have been found to improve. Bram, studying 5,000 cases of thyroid hyperactivity, found that 90 per cent. had severe psychic trauma preceding the onset of the disease. In only four per cent. of this series was focal infection thought to be a cause and in three per cent. the use of iodine or thyroid extract were possible factors. We may at least say that in many instances the treatment of the emotional problems in addition to rest will make thyroid surgery unnecessary. In one of our large Chicago clinics no patient with thyroid over-activity is operated upon without first being examined by a psychiatrist for the purpose of evaluating the emotional situation.

Menninger's article, written in 1934, entitled, *Polysurgery and Polysurgical Addiction*, deals with the psychological factors in multiple surgery and points out that many persons resort to surgery time and again for the gratification of morbid needs. One striking example given in this article is that of the patient who undergoes mul-

multiple plastic operations. Menninger says: "It is very striking in studying the surgical literature that the plastic surgeons themselves recognize 'a morbid neurotic craving on the part of the patient to have something done' to correct a defect which they rarely evaluate objectively." Blair and Brown advise caution in the correction of slight defects to which the individual seems to attach an exaggerated importance. They mention cases which are successfully treated, yet the results were displeasing to the patient.

Many abdominal operations might often be avoided if psychological factors were taken into account.

Recently a surgical colleague asked for advice about a girl on whom he had operated upon three times. She had returned with symptoms which seemed to indicate the need for a fourth operation. Twice previously the diagnosis had been "adhesions" and each time little more than a laparotomy had been necessary. He was advised against intervening again. However, the patient was operated upon elsewhere. The report of the findings in this operation were negative.

Even at the risk of making the problem seem more complex we must state at this point that no physical symptom per se can be used to make a diagnosis of neurosis. The single exception is the glove and stocking anesthesia of the classical hysteric. All the other physical symptoms which have been indicated may be due to either organic or psychic causes. This is mentioned particularly as a caution against giving way unwittingly to the exasperation which we all tend to feel when in some cases our diagnostic powers have failed. In such cases the emotional factors most certainly should be considered but the tendency to wash our hands of the case after a psychiatric referral has been made must be avoided. One case will illustrate the point.

A male patient, who had been studied carefully by internists and ear, nose and throat specialists because of a right-sided hemicrania, right-sided tinnitus, nausea, vomiting and many other gastrointestinal complaints, was finally referred for psychiatric treatment because no medical diagnosis could be made and because the patient's complaining and whining seemed to indicate a neurotic problem. The neurotic problem was definitely present but some months later a slowly growing malignant tumor of Rathke's pouch was also found. Radiation therapy gave the patient sufficient relief so that the grosser aspects of his neurotic behavior disappeared, though of course, he remained essentially a neurotic individual.

Again, in hospital practice, postoperative toxic confusional states may create some impa-

tience with a patient who may require nothing more than a change in sedatives or a careful check of his fluid or caloric intake, or his urinary output to determine the necessary procedures for amelioration.

It is well to state here that in cases of elective surgery, whenever the element of the patient's manifest anxiety is extreme, great caution should be exercised in the preparation of the patient. In certain cases the operation may need to be given up. It seems clear that panic may contribute seriously to shock. Extreme panic may be connected with a strong wish to die to which, on the other hand, the individual is reacting with fear. Likewise, if there are excessive postoperative reactions not to be accounted for by explicit organic findings it would be well to suspect some psychological disturbance as in the case of postpartum psychoses. Psychiatric intervention at this time may in some instances prevent a really serious breakdown. Of course, one cannot wait till delusions, hallucinations and excitement have appeared before help is obtained. In many instances, if the attending physician himself would take the trouble to hold some reassuring discussions with the patient as to what is on his mind, this might be all that is necessary.

One of the things which we have learned in child psychiatry particularly is that in the instance of children's problems, not only the given child but his whole milieu are problems for the physician. From this point of view it is not too much to say that the pediatrician who is called in to care for a new born infant might be conceived to have a responsibility also towards the next older siblings. Recurrence of soiling and wetting, speech difficulties to the extent of full loss of speech, feeding problems and general disturbances of behavior and even organic-seeming illness such as cryptic fevers, may be reactions to the disturbance in the emotional economy of the child's life produced by the birth of a new baby. Other major changes in the life situation such as the death of a parent or sibling, upheavals in the family as the result of marital problems, moving to a new locality, etc., all these will have their repercussions in the feelings of the young child and disturbances may manifest themselves in one or several of the symptom pictures mentioned. Sometimes behavior which is otherwise typical of the postencephalitic child or of the true choreas may be manifestations of reactions to such major

life experiences as have been mentioned. The life situation of the child particularly must not be overlooked when considering active intervention of a surgical nature. A child who is struggling with its resentful feelings about the birth of a rival should not be subjected at the same time to a tonsillectomy or circumcision which are subjectively felt as punishments. Any kind of a medical experience is potentially a traumatic event in the life of a child and to the extent to which it is controllable, as for instance in elective surgery, such an experience should not overlap such spontaneously occurring traumatic events as are seen in the life situation. It is not too much to state that it is never desirable to bring a child to the hospital for operation under false pretenses. Particularly, such a practice as performing a circumcision, for which the patient has not been prepared in advance, simply because the child is still anesthetic after a tonsillectomy, should be avoided. It is indeed questionable if circumcision, unless obligatory for serious organic reasons, should be performed on a child beyond the early infancy period. In general, the child should be prepared psychologically for medical or surgical intervention even more carefully than the adult because the repercussions in later life are likely to be more far reaching. Finally, the pediatrician cannot afford to forget that mother love is not the universal quality that we sentimentally believe it is, and that many children's ailments must be scrutinized in terms of disturbed maternal attitudes.

Now a few remarks about psychiatric principles in relation to the art of practice in general. Probably the most important thing psychiatry has learned is that there are many therapeutic virtues in the mere talking through of a problem. With the emphasis on technical and laboratory matters that modern medicine is characterized by, the human individual is too often looked upon as having no more prerogatives than the experimental animal. Even in those cases in which the presenting symptoms are entirely organic in nature we see in addition worry, concern or anxiety about the illness. No person who is ill can assume the same objective attitude towards his illness as the physician who is studying him and he requires more than just competent medical or surgical treatment. In fact, many doctors have made or spoiled their careers depending on how they have treated the patient as a human being.

The most successful are those who deliberately or intuitively treat the normal emotional problems associated with the organic picture.

It is not uncommon in hospital practice for the staff to gather about the patient's bed, learnedly discuss the findings, diagnosis and prognosis and leave the bedside and the patient without troubling to deal with the perplexity and anxiety which has arisen as a result of the discussion. As one patient commented, "They talked all about me but they didn't tell me." The mere telling him was enough to make a considerable difference in his outlook. In a similar connection a convalescent patient may often present a picture of excessive debility and apprehension which may interfere with his convalescence because of worry and preoccupation with real life problems which will need to be dealt with on leaving the hospital. It is not too much to say that good medical practice needs to deal with this as a medical complication.

The old family doctor who knew his patient from birth onward, intuitively and naturally dealt with such problems without the corroboration of modern psychiatry to justify him. The patient who selects his own doctor more often than not knows nothing of the physician's skill but nearly always he comes to him with a deep, if concealed, trust, dependence and hope which in technical psychiatric terms is referred to as the transference. This aspect of the physician's relationship to the patient is of extreme importance and is responsible for many of the "cures" which physicians effect under conditions which they themselves do not presume to be the outcome of their technical competence. Very often we categorize these recoveries as due to "nature" or "resistance" or to "attenuated virulence of the infection." The experience of the psychiatrist would tend to indicate that even if these factors are operating there is an accessory factor which is of tremendous importance—that is the factor referred to as transference. We cannot tell in how many instances this may be the most important factor even in organic disease. We therefore cannot afford to jeopardize its helpfulness by neglecting the implications of our human relationship with the patient and of those human problems in his life which cannot be surveyed under a microscope but must be dealt with by way of simple human understanding.

5461 Everett Ave.

BIBLIOGRAPHY

- Alexander, F., et al: Symposium on the Influence of Psychological Factors upon Gastrointestinal Disturbances, *Psychoanalyt. Quart.*, 3: Oct., 1934.
- Bram, Israel: Psychic Trauma in the Etiology of Grave's Disease: A Survey of 5,000 Case Histories, *Am. J. Psychiat.*, 92: 1077, 1936.
- Bryan, W. A.: Relation of Psychiatry to Medicine, *N. E. J. Med.*, 215: 693, 1936.
- Dunbar, H. F.: Emotions and Bodily Changes, New York: Columbia University Press, 1935.
- Menninger, K. A.: Polysurgery and Polysurgic Addiction, *Psychoanalyt. Quart.*, 3: 1934.
- Menninger, K. A.: The Psychological Factor in Disease, *Bull. of Menninger Clinic*, 3: Jan., 1939.
- Moos, E.: Zur Behandlungen der Asthma Bronchiale, *Munchen Med. Wchuschr.*, 75: 1841, 1928. (Quoted from Bryan.)
- Overholser, W.: Role of Psychiatry in General Medicine, *Diplomate*, 10: 164, 1938.

THE OPERATIVE TREATMENT OF FRACTURES

PAUL B. MAGNUSON, M. D.

CHICAGO

The operative aspect of the treatment of fractures is but a small part of the treatment in general. The great majority of fractures can be satisfactorily cared for by the closed methods, particularly the more common fractures with which we are all familiar, which are caused by indirect violence.

There are certain groups of fractures, however, in which good results cannot be obtained by closed reduction. There are two reasons for this, 1. either a displaced fragment cannot be controlled and brought into a position where healing can take place, or 2. even if healing does take place, a good functional result cannot be obtained. In the first group we have such fractures as those through the surgical neck of the humerus, with a dislocation of the head, and those through the neck of the radius with dislocation or fragmentation of its head with an associated tearing of the orbicular ligament. In the second group we have those fractures involving the patella and the olecranon with wide separation, and depressed fractures of the lateral tibial plateau.

Since these are perhaps the most common of the fractures usually demanding operative attention, let us consider the basis for this method of treatment and the principles underlying its application to each of these instances.

Fracture Dislocation of the Shoulder: When the arm is violently abducted, as by a fall with the force of the body behind it, the neck of the humerus near the greater tuberosity impinges against the acromion process. This point then becomes a fulcrum with the long power arm of the lever reaching from there to the hand and the short arm made up of the head alone. The head is first forced out of the joint through a rent usually in the anterior inferior portion of the capsule. As the force is continued, the surgical neck is fractured. Then, in most instances, the patient, realizing he has been hurt, will at the expense of great pain, bring the arm down to the side, and it is this adduction of the long distal fragment which completely separates the fractures and dissociates the head from the shaft. The head then lies in the soft parts of the axilla, completely inaccessible as far as any traction or manipulation of the arm is concerned. Less severe modifications of such a situation may, of course, exist, and remaining connections of muscle, tendon or capsule may permit of a successful maneuver, but such instances are as rare as they are fortunate. The muscles attached to the greater and lesser tuberosities, which are a part of the head fragment, have their origin on the scapula, and are much more effective in their tendency to keep the head displaced than any remaining flimsy tissue connected with the shaft. Frequently, also, (and not shown clearly in all x-rays) the head fragment is comminuted, either by avulsion of the greater tuberosity or in less definite ways which further makes the head a loose foreign body in the axilla. It is obvious, then, that open reduction alone can realign these fragments, and if this is not done, and the head remains displaced, not only will the shoulder itself be disabled, but irreparable damage will be done to the arm, forearm and hand by the continued pressure of the head on lymphatics, blood vessels and nerves.

Thus open reduction, done within a few days after the injury, need not be difficult but done later, after organization and fibrosis have taken place, it will be not only difficult, but perhaps impossible. An adequate incision is made parallel with and over the long tendon of the biceps. The deltoid fibres are separated, and the joint entered. The head is replaced through the tear in the capsule by lifting with the fingers, if this is possible, and if impossible, the head

may be levered into position with a smooth surfaced instrument, care being taken not to injure the nerves and vessels lying under it. Fixation by any of the usual methods will suffice, and the position of 60 degrees of abduction, with slight flexion, is the one of choice. It is well to remember, however, that the material used for the internal fixation of these fragments should be strong enough to allow at least passive motion before bony union is complete.

Fractures of the Head of the Radius: The head of the radius may be fractured by direct violence against the dorso-lateral aspect of the upper forearm or by indirect violence against the heel of the hand, in which instance the force is carried up the radial shaft and impinges the head against the capitellum of the humerus. The radial head depends for its smooth rotatory action on the orbicular ligament, which is a modified part of the lateral ligament of the elbow. It is a tough, fibrous band, and its articular surface is as smooth as hyaline cartilage. When the radial head is displaced by a fracture through the radial neck or when the head is badly comminuted against the lower end of the humerus, the orbicular ligament must necessarily be torn. Its heavy consistency and bulk then cause it to occupy at least some of the space formerly occupied by the radial head. It is this factor which makes the replacement of the head very difficult, and even when this is successfully accomplished the resultant fibrosis associated with the healing of the ligament will be responsible for considerable limitation of pronation and supination of the forearm. It is obvious that in instances where the head has been badly comminuted there can be no control over the fragments. They will heal together in the displaced position, and the result will be a bony mass which does not resemble a normal head in either size or contour, and cannot possibly duplicate its function.

It becomes apparent, then, that when such a situation exists all the radial fragments down to the bicipital tubercle, and including the orbicular ligament, must be removed. No immobilization is necessary after such an operation, and early motion is desirable. This motion will aid nature's effort to cover the denuded upper end of the radius with a heavy fibrous tissue which in time will become fibro-cartilaginous. The operative field in these instances is readily accessible through a small incision on the posterolateral aspect of the elbow joint. The incision

is posterior to the radial nerve, which is the only important structure which might be encountered.

The Patella: The patella is but one part of the extensor mechanism of the knee and, fortunately, its presence makes it possible for us to visualize by x-ray at least this part of the extensor muscle attachments. It is by no means the most important of these parts but is placed there merely to aid in the anchoring of the quadriceps expansion and the patellar tendon, and to provide for a smooth working surface when extension power is applied to straighten the flexed knee. When pulled apart by violent muscular contraction, or when fractured by direct violence, the visible separation of the patellar fragments represents with a fair degree of accuracy the amount of separation of the extensor aponeurosis as a whole. It does not represent by any means the only damage to the knee joint. We are all familiar with the fact that the entire patella can be excised and allow a functioning knee to remain or that one or more fragments of a comminuted fracture are frequently removed with satisfactory results. The step that makes such seemingly radical surgery possible, however, is the adequate approximation of the fibrous aponeurosis and sufficient immobilization for solid healing. It is this structure, of which the patella is but a part, that is important, so regardless of the incision used, regardless of the method used to keep the fragments in contact, whether drilled or encircled with wire, heavy silk, fascia, or what not, these remaining soft parts on the anterior surface of the knee must be repaired and protected if the operation is to be complete. If wire or heavy silk is used, motion may be started when the operative reaction has subsided because such firm materials will keep the patellar fragments together and in so doing will take any strain off the suture line of the ligaments. If lighter materials are used, the knee must be kept in extension until at least some bony union has taken place.

The Olecranon: In the anatomical and surgical considerations of the olecranon it is similar to the patella in many ways. They are both important extension units and the quadriceps tendon and the triceps tendon are alike in that they are very strong and will in most instances tear the bone to which they are attached rather than allow the force to tear them. The humero-ulnar joint is not nearly as complex as the knee

and because of the pure hinge action of this joint, there is no need for the development of a sesamoid bone within the fibers of the triceps tendon. Separation of the fragments in a fracture of the olecranon will, as in the case of the patella, weaken extension power if allowed to heal in such position. However, if only moderate separation exists, it will be more likely to bridge with callus than a similar situation in the patella, because the olecranon is not a sesamoid bone, and has a periosteal covering. If great separation is allowed to remain, the sharp angle of the shaft from which the olecranon has been torn will cause a roughening of the articular cartilage of the humeral trochlea. This will undoubtedly produce a disability. In such an injury the accurate replacement of the bony fragments, and their healing, is important. The fibrous expansion of the triceps tendon, unlike the quadriceps, plays a decidedly minor role in the extension mechanism of the elbow.

The Lateral Tibial Plateau: This common injury is caused by direct violence against the lateral surface of the knee, or by indirect violence against the lateral surface of the thigh higher up, with the foot and leg fixed. This throws the knee into a forced valgus position. If, under these conditions the internal collateral ligament of the knee holds, the lateral femoral condyle will crush the lateral tibial plateau. If the ligament gives way, and the violence is continued, any degree of medial dislocation may take place, depending on its force and duration. If the ligament holds, and the plateau is depressed, it will occur in one of two ways, 1. the entire fragment may be depressed intact, or 2. the fragment will be comminuted, crushed, and impacted in this depressed condition, with the destruction of many bone cells.

If the displacement is appreciable, no manipulation will succeed in reducing it and the clamps and redresseurs advocated for such conditions will usually fail. This failure is due for the most part to a lack of purchase area, the position of the upper end of the fibula contributing to this. Thus, this is another instance in which primary open reduction is indicated.

The incision should be long enough to give access to the lateral aspect of the knee. It is made on the lateral surface of the joint, in front of the head of the fibula, and avoiding the superficial peroneal nerve which leaves the parent

trunk near this point. If the fracture is made up of a single depressed fragment, its elevation and fixation with a long screw may be comparatively simple. If, however, the fracture is crushed and impacted, it may have to be elevated more or less piecemeal and the resultant defect filled in with pieces of cortical bone taken from the tibial crest near by. The rather long period of immobilization added to the insult of the injury and operation frequently results in permanent limitation of motion.

The fractures briefly discussed here are among those which are caused for the most part by standard forms of indirect violence, thus resulting in rather typical and familiar displacements. For this reason they are many times simple when compared to the atypical and perhaps unique displacements which are seen in direct violence injuries, and which may necessitate open reduction because of failure of closed methods, nerve injuries, interposition of soft parts, or the like. It is to be noted that each of the aforementioned fractures, however common it may be, is one which invades the surface of an important joint. The actual surgical repair is not the outstanding feature of what constitutes good treatment in these instances. It is to be remembered that an open operation in the case of any fracture which enters a joint means surgery in the joint, and if wound infection ensues joint infection almost invariably follows, with danger to life and limb, prolonged convalescence and uncertain outcome. Repair, beautifully done, at an ill advised time, may produce dire results.

In all fracture treatment the method of choice should be adapted to the particular type of fracture at hand, and operative methods are no exception to this rule. I have been for many years strongly opposed to the use of steel plates in the retention of fractures. My feeling has been partly due to having seen in the early days of my practice a series of very disastrous results from the use of plates in the hands of men who had much enthusiasm and little equipment to do bone surgery. The application of a steel plate to bone takes less equipment than any other retention apparatus, except possibly wire. A drill and screw driver are considered sufficient. Then, too, the quality of the material from which plates were made was not standardized. Some of them were brittle and broke under strain. Some of them were soft and bent under strain.

and in either case deformity occurred. The screw being rather short and of the wood screw type, only one side of the cortex of the bone was engaged, and consequently a firm grip on the bone could not be obtained and maintained. The plates were often put on fractures where a plate was not applicable; in other words, where the fracture was near enough to one end of a bone so that one end of the plate was applied to cortical bone and the other mostly to cancellous bone, as a consequence of which the results were disastrous.

Furthermore, the aseptic technic often was insufficient to prevent infection. Osteomyelitis was frequent. The patient, instead of receiving benefit from an operation, was sometimes rendered crippled for life because of the operation. Of course, these things can all be avoided. Plates can be obtained now which are thin, and pliable enough to be plated to fit uniformly the contour of the bone. The drills are made to cut just enough bone out to allow a machine thread screw, and the screws are made in different lengths to conform to different diameters of bone, so that the threads will cut snugly into the bone from the outside of one cortex to the outside of the opposite one, thereby getting a firm, even grip. The plates must be selected so that the fracture is supported equally on both sides by insertion of the screws through solid bone, not through cancellous bone on one side of the fracture and cortical bone on the other.

Fractures of the bones of the forearm are famous for being difficult to bring into position and retain in position, because of the angulation of muscle pull and its relation to the long axis of the bone. This is always true, and any fixation apparatus, internal or external, may not hold; therefore, constant traction and counter-traction which may be applied to the surface of the skin or by way of wire through the bone, is sometimes necessary. I believe if careful consideration is given to each fracture, to the anatomy and physiology of the structures surrounding that fracture, to the aseptic technic necessary in the operation, as well as to the mechanics of open operation, much better results will be the rule in the future. Careful cleansing of the skin, careful draping of the field of operation, protection of wound edges, scrupulous attention to aseptic precautions with respect to assistants and nurses, as well as fixation materials and

instruments, will obviate many of the catastrophes we have seen in the past.

Fractures of the Neck of the Femur: Within the last two years these fractures have come to be considered always operative by a considerable number of surgeons, and this feeling is spreading to the medical profession as a whole. There have been many reports written as to the simplicity of procedure and the perfect results obtained by internal fixation of the fractured hip. Like many comparatively new things in medicine, the pendulum is swinging strongly in this direction, and it will be only by the accumulation of statistics that we can tell what the percentage of risk is under various forms of treatment in various types of cases.

Treatment of this fracture is also an individual problem. The age of the patient, his physical condition, the difficulties of operative procedure on that particular patient, must all be considered. Operation on a fat woman of 70 is a very different matter than on a thin woman of 55, in comparable health. Also, the ability to retain the fragments in position differs according to the location and angle of the fracture.

This fracture has been spoken of as fracture of the neck of the femur, without any qualification. A subcapital fracture, with the head in valgus position, practically never needs to be considered an operative case, whereas a mid-cervical fracture that has a line which more or less parallels the weight-bearing line of the shaft of the femur is extremely difficult to reduce and hold in reduction. These fractures occur at all angles, and the difficulties vary accordingly.

It is the consensus of opinion among men who have so far done most of this work, that 100 per cent. reduction has a definite bearing on ultimate union. X-rays are often carelessly taken. The lower fragment is allowed to lie on the table in complete external rotation, and the x-ray is made where the fractured surface of the lower fragment points almost directly toward the tube in the anteroposterior position. This does not give an adequate idea of the line of fracture and, as in the shoulder, one should have a profile view to gauge the line of fracture. In the shoulder, external rotation is necessary to throw the greater tuberosity into profile view in the anteroposterior x-ray. In fracture of the hip, internal rotation of the leg is necessary. It is also necessary to get good lateral views in

an obese patient, which is frequently difficult unless all the equipment to do so is at hand—which it seldom is. Therefore, until much more study has been given the problem by men who have all the equipment and skill necessary to deal with the exigencies of a given case, treatment of fracture of the neck of the femur must be considered a major problem. I believe it can be stated at this time, however, that if the fracture at hand is properly analyzed, and if the fragments are fixed by internal fixation, properly and skillfully, the results in general are better by this method. It must not be considered an easy or simple method, or without risk, however, and all requisite equipment should be at hand before it is decided to so treat the fracture.

This is more or less a rambling discussion, but when one is asked to discuss the operative treatment of fractures in forty minutes, after having tried it for thirty years, it can scarcely be other than a rambling discussion, because the specific case or group of cases cannot be identified. To cover the field would be a matter of forty days' discussion, and even then it would not be finished so far as an individual case is concerned.

DISCUSSION

Dr. James Jackson, Madison, Wisconsin: I know of no surgeon in the country today who is better qualified by training and by the seriousness with which he approaches his work than Paul Magnuson. I have admired him for many years and have never heard him speak without learning something, and I think everybody else does. He really understands fractures, and it is rather an anticlimax to have a man who has had no more experience than myself, try to speak after Paul.

There is one thing I am sorry about—his condemnation of the Lane plate. When Lane came to America and operated in Murphy's Clinic, I was there, too, but fortunately for me I did not live in Chicago, and after seeing his work I went home still thinking it was a most wonderful thing. I went ahead with the work and for many years have been using plates on fractured bones. Certainly if I had had the terrible results Paul speaks of, I would have quit it years ago, but I have had excellent results as many of you know. Lane was all alone, he did not have his own assistants or nurses but had to operate with those to help him who were utterly unacquainted with his no touch technique. Is it any wonder that the results were less than expected, that infection occurred and many cases ended in disaster and everybody said it was terrible? If Paul had not seen so many bad results I believe he would have plated a lot of femurs and tibias, and I am sure he would have been just as proud of the results he would

have achieved in this manner as he is of the fine work he has accomplished by other means.

Fracture dislocation of the head of the humerus should be treated by open operative methods in most instances; of this there can be no question. I recently had a case in a young woman that was complicated by severe diabetes. While in insulin shocks she had fallen and received this injury. The articular surface of the head was split longitudinally. We tried to do a closed reduction but only succeeded in dislodging the head further posteriorly. I do not believe the head could have survived if it had been reduced after being dislodged so completely. I had previously performed an arthroplasty on her opposite shoulder for ankylosis which was also the result of a fall while in insulin shock. My associate, Dr. Gallagher, recalled that while on service with Dr. William Darrach and Dr. Clay Ray Murray of New York, they had endeavored to remove a posteriorly dislocated head by the anterior route and it proved to be a very difficult procedure. After working for some two hours they turned the patient over and with a posterior incision removed the head quite easily. I was familiar with the Kocher posterior incision to approach the joint but this is a procedure of considerable magnitude involving the severance of the acromion process and dislodging several of the muscles of the scapula. By making a moderately-sized hockey stick incision posteriorly, spreading the posterior portion of the deltoid and elevating the infraspinatus muscle and opening the capsule, I succeeded in removing the head very easily. The end result was all that could be expected and gave her considerable motion in the joint. This shows the importance of making a careful study beforehand, and making your approach in the simplest manner possible in these cases.

Preoperative preparation of the field is a very important part of the technique and should not be left entirely to interns and nurses. I believe a two days preparation is none too much. I never take my eyes off the patient from the time the preparation starts in the anesthetic room until he is fully draped on the operating table. I do not want infection and by observing a careful technique I do not get it. The proper technique is not difficult for a good general surgeon to acquire but does need careful study, trained assistants, adequate armamentarium, and observance of all the rules. This type of work should not be done as an emergency nor by men who by lack of training or experience are unsuited to do it. For example, I was recently called on the telephone by a country doctor who said he had a femur to plate in the morning and asked me over the telephone how to do it. I answered him by saying that I had been studying this problem for over twenty-five years and I did not believe that I could give him the results of this experience in a two minute conversation over the telephone. There has resulted in the past and will be in the future, many instances of catastrophe in the open treatment of fractures so long as doctors will attempt this type of work who know nothing of the technique and who have the foolhardiness to attempt this work where many good surgeons fear to tread.

Dr. Cubbins, who in the past has been one of my most severe critics, said to me on the side one day, "It is all right for you to do it, Jimmy, but I haven't your mechanical dexterity and do not know how to put on plates and screws." Dr. Cubbins can and does do this work and has performed the open operation in many instances as narrated in his article on "One Hundred Cases of Bumper Fractures," published some time ago in *Surgery, Gynecology, and Obstetrics*, in which he reports openly elevating and nailing the displaced portion of the upper end of the tibia in fifty per cent. of such cases.

By the operative treatment of fractures we are enabled to start early motion and exercises of muscles, one of the most important elements in the preservation of function and restoration of the structures to normal. I have my patients do what I call static exercises, i. e., alternate contraction and relaxation of the muscles without flexion of the joints. This I have them do for a definite number of minutes each hour during the day and it is quite surprising to see how little atrophy results when the method is carried out. Dr. Magnuson does not use a cast over the knee joint when he has openly reduced a fracture of the patella. This is excellent and I fully believe in it. I do use a posterior splint for four or five days or compression bandage over rubber pads which obviates the accumulation of synovial fluid or hemarthrosis in the joint. Again I agree that an important part of this operation is the suture of the torn lateral ligaments. This is important for close approximation of the bony fragments is absolutely necessary if we are to obtain bony union and avoid fibrous union and thus avoid refracture at a later date. I have used phosphorbronze wire, stove wire, chromic catgut, and kangaroo tendon. Recently I have been using No. 21 gage Babcock rustless steel wire. It is beautiful to handle and by twisting the ends of the wire you can achieve a perfect approximation but there is a tendency for it to break as instanced in two of our cases. This wire must be stronger than it is if we are to continue to use it. When the lower fragment is comminuted and broken into many pieces by striking the dashboard of an automobile, it is much better to completely remove these fragments and suture the upper fragment to the infrapatellar ligament. In the delayed union cases it is often necessary to lengthen the quadriceps tendon by the Bennett method and lateral incisions at the upper border of the patella as mentioned by Key. This gives a much stronger union than fibrous tissue between the fragments. I am as yet unwilling to remove the patella completely except in the rarest cases, as I believe the large upper fragment does protect the articular end of the femur when the knee joint is flexed. This, it seems to me, is the main function of the patella and it should be preserved if possible.

Fracture of both bones of the forearm is to most of us one of the most difficult fractures in which to achieve a good result. We consider these cases, except in children, as operative, and thereby often avoid synostosis with its complete loss of supination and pronation in the forearm.

In fracture of the neck of the femur no one as yet knows quite where we stand but certainly by the method of nailing or pinning this fracture, we are enabling these elderly debilitated persons to get out of bed without pain at a very much earlier date than by the Whitman method, and this in itself, no matter what the end results may finally be, makes the procedure justifiable. There is much discussion today as to whether the hip joint should be opened in the reduction and fixation of this fracture or whether the fracture should be fixed by the so-called blind method. Certainly if the fracture cannot be reduced by manipulation the joint must be opened, but for the average surgeon to open the joint and treat the fracture is quite an ordeal and does result in shock to these elderly people, despite the fact that Dr. Magnuson says no shock results. I do not believe from my own experience and that of others that interposition of soft tissue between the fragments occurs in about one out of five instances of this fracture as cited by Cubbins and Callahan. At our Clinic we have developed a clamp somewhat similar to a Lane clamp which we apply to the base of the neck of the femur and drill in a Steinman pin. The clamp is then removed and a cannulized Smith-Petersen nail is driven into the head and the fracture impacted. This work is done entirely under fluoroscopic control and is much more rapid than the plate method. We get the lateral view under the fluoroscope with the hip flexed at 90° and in internal rotation with slight abduction. I use a motor drill with which to insert the Steinman pin. By rheostat control we cut down the rapidity of the drilling and inasmuch as we are going through cancellous bone, I do not believe there is any burning of the bone. By first fixing the head of the femur by a Steinman pin, we avoid rotation of the head should the nail not strike squarely in the center. Early weight-bearing is at present a very much disputed question. Smith-Petersen has come to the conclusion that it should be avoided for at least three or four months. Often men of large experience, such as Thornton, believe the cases do better with early weight-bearing rather than late. Experience during the next few years should settle this question. In some selected cases of elderly slight frame subjects, full weight-bearing is encouraged in a matter of six or eight weeks but possibly time will show that this is too early.

I wish to apologize for the length and more or less chaotic nature of my discussion. Only a few minutes ago I was unexpectedly asked to discuss Dr. Magnuson's paper and I wish to thank you for your forbearance in listening to it so attentively.

Dr. Paul B. Magnuson, Chicago: I want to correct some wrong impressions which I apparently gave you. I have no criticism of the technic of Lane. What we saw was the result of Lane salesmanship. Dr. Jackson went home and carried out correctly the technic, but there were a lot of people who tried it because it was easy and all that was needed was a screw driver and a plate, and for a time it seemed that they operated on anyone who would stand still. Consequently we saw a lot of infections. I think the

so-called Lane plate has never been standardized. Many are brittle, or bend, and the screws were placed through one side of the cortex only, and were put through cancellous bone where they could not possibly hold.

I am not condemning steel plates. As a matter of fact, Darrach has a real plate, and we have used these. They are really tough. They have screws of various lengths which go through the bone to the cortex on the other side and really get a grip. They permit early motion, thus avoiding the terrific atrophy that Dr. Jackson spoke of. I certainly do not condemn the use of plates, put in in the right way and on the right patient, but the promiscuous use of plates in the wrong way in open reduction of fractures I do condemn.

Of course I bring the bones together in the patella. It will not spring apart if the quadriceps is fastened to the tendon. The small pieces should be taken out, but the patella must be brought fracture-line to fracture-line.

I do not agree with Dr. Jackson at all on the question of shock in hip cases. What difference is there between an incision over the trochanter long enough to see through or a hockey stick incision a little anterior that you can see through? I have never seen any shock, and I have done a number of operations, the oldest patient being 83 and the youngest 37. Dr. Jackson says the spicules of bone would not make any difference if you impacted them. That is all right, but how do you know which way they are pointing? If they are pointing the wrong way the head pivots on them, and I have seen that happen.

Dr. Frederick Christopher, Evanston: I have enjoyed this afternoon very much, and profited by the discussions. There is one contribution I would like to make because of the remarks about impaction. About a year ago I was attracted by an article by George Apfelbach about walking on impacted fractures. We have considered an impacted fracture one that looked like an impacted fracture in the x-ray. I know there have been some errors, because we did not take lateral views. If the patient is lifted off the bed and put in a short spica above the knee and around the pelvis, in wide abduction, and then the good leg is elevated, with the spica on the injured side, the patients can be on crutches in two or three days, and walk with a cane in ten days. We have had nine or ten cases last year. It is too soon to report, but everyone has walked and in the follow-ups there has been no shift of position. Dr. Brackett told me he would not publish any articles on the hip until two years had elapsed, but so far the results are so encouraging that I feel justified in commending that method. We know that if they walk on it it will unite.

I would like to make a plea for opening transverse fracture of the femur and reducing it, and not fixing it, particularly in a child. I have seen profound shock result from an attempt at reduction, and in a cast they get a beautiful result. I also want to make a point in some fractures of the olecranon, where the triceps tendon goes beyond the fracture. If in an elderly person and there is the slightest power of extension of the arm, I do not think you need to operate.

This is early to mention, but we have two cases and some of my friends have more, done by Brooks' treatment of fracture of the patella. I am convinced it is proper for all compound fractures of the patella, and am beginning to think it is proper for all fractures of the patella. In 1937 he published an article pointing out the rationale of treatment of fractures of the patella. He found that the kangaroo had hardly any patella, the elephant had a very large one, and that the smaller and more active the animal the smaller the patella. He opened the knee and took out the patella and sewed the periosteum around the patella together. He got to making experiments on the cadaver and showed a large number of cases. Dr. Jennings, at my suggestion, operated on a boy who was brought in with the fracture streaked and dirty. It was cleansed with copious irrigations, and he took out every fragment of patella, closed it, and that boy has been playing basketball. He has great strength in the quadriceps. I have since done it on a simple transverse fracture of the patella. I confess the difficulty lies in approximating the thin periosteum, but the return of function is very rapid. Perhaps, since bony union rarely occurs, we can take the patella out and throw it away.

MASSIVE HEMORRHAGE FROM AN EPISIOTOMY

CHARLES FENKELSTEIN, B.S., M.D.

From the Obstetrical Service of the Cook County Hospital

CHICAGO

Massive hemorrhage from an episiotomy is rare, especially when the hemorrhage endangers the life of the parturient. A case is reported in which an episiotomy was performed preparatory to a forceps delivery. This was followed by a severe hemorrhage from both sides of the wound which necessitated an immediate blood transfusion.

CASE REPORT

Mrs. M. D., aged 25, primipara whose prenatal course was uneventful, entered the Cook County Hospital February 9, 1934, at midnight, stating that labor began on February 8th, at 9:00 P. M.

Examination at 12:45 A. M., uterine contractions of moderate degree every ten minutes. Rectal examination disclosed cervical dilatation of two cm. and partial effacement. The bag of waters was intact. The fetal heart tones were 140 and good quality. Diagnosis was made of O. R. T.

At 8:30 P. M., vaginal examination revealed the bag of waters ruptured, cervical dilatation five cm. and the presenting part at the ischial spines. Fetal heart tones were 140 and uterine contractions were every five minutes. The parturient's condition was good. Morphine sulphate gr. $\frac{1}{4}$ and scopolamine gr. $\frac{1}{150}$ were given.

On February 10, at 8:30 A. M., the cervical dilatation was six to seven cm. and the presenting part was just

below the ischial spines. The fetal heart tones were 140 and good quality.

At 6:30 P. M., cervical dilatation was complete. The presenting part was on the perineum. Uterine contractions were every two minutes and there was no progress of the fetal head.

At 8:00 P. M., the station of the presenting part was unchanged. The diagnosis was O.R.T., and the fetal heart tones were 140 and good quality. Owing to the prolonged first stage, and nearly two hours of the second stage with no progress, it was decided to perform a forceps delivery.

Patient was prepared for delivery. A left mediolateral episiotomy was performed which was immediately followed by a profuse hemorrhage from both edges of the wound. The bleeding was so massive that it was necessary to control it immediately by continuous mattress sutures of the edges of the vaginal walls. By this time the parturient showed marked evidence of secondary hemorrhage. The temperature was 100 degrees F., respiration 36, and the pulse was imperceptible.

Forceps were applied, but traction failed to bring about descent of the fetal head. The forceps was removed and intrauterine examination was made which presented a constriction ring about the fetal neck and about eight cc. above the external os. Adrenalin M. 10 was given, but the constriction ring failed to relax. On account of the poor condition of the parturient due to the severe hemorrhage, delivery was postponed and treatment instituted for the state of hemorrhage. External heat was applied, intravenous glucose and a blood transfusion of 500 cc., of whole blood was given by the direct method. The parturient reacted.

At 11:20 P. M., the parturient was in fairly good condition and she was again prepared for delivery. The fetal heart tones at this time were not audible. An intrauterine examination was made and the ring was found around the fetal neck. Adrenalin M. 10, and M. 10 repeated in ten minutes, was given with the fingers held against the ring. The ring began to relax, so forceps were applied and by continuous traction the head was delivered. A Braun book was applied to the anterior axilla and a stillbirth delivered at 11:45 P. M. The placenta was removed manually with moderate bleeding. The episiotomy was repaired with deep silk worm sutures.

The patient was returned to bed and external heat applied. Pituitrin ampoule 1 was given and subcutaneous fluids were started. Digito and caffeine sodium benzoate were given every four hours in alternating doses.

After a stormy convalescence the patient recovered. The episiotomy wound became infected but responded well to local treatment.

DIAGNOSIS

Massive hemorrhage from an episiotomy complicated by a constriction ring dystocia.

The rarity of this type of hemorrhage following an episiotomy leads me to speculate as fol-

lows: The blood supply of the upper part of the vagina is derived from the vaginal branches of the uterine arteries and hypogastric arteries. The lower part of the vagina is supplied from the pudendal arteries.

In this instance, I believe that the hemorrhage being so severe was due to an anomalous blood supply of the vagina in which the vaginal branches of the uterine and hypogastric arteries passed downward to the mucocutaneous junction of the vagina. That would account for the hemorrhage being constant from both the lateral and mesial incised vaginal walls. In a pudendal arterial hemorrhage following an episiotomy, the hemorrhage is mainly from the lateral incised vaginal wall.

55 East Washington Street.

DAMAGED ENOUGH ALREADY

Lawyer (helping pedestrian up)—Come with me, my man. You can get damages.

Pedestrian (groggy)—H'v'ens man, I got all the damages I want. Get me some repairs.—*New Smyrna Breeze.*

Society Proceedings

November 1st—Lawrence County Medical Society, Lawrenceville. Hotel Lawrence. Dinner at 7:30 P. M. Dr. James H. Hutton will speak on "Classification and Management of the Hypotensive Case."

November 2nd—Hancock County Medical Society, Carthage. Carthage Hotel. Dinner at 6:30 P. M. Dr. J. R. Ballinger will speak on some Medico-Legal subject and Dr. Irving Dreyer of Chicago will speak on "Arthritis."

November 14—Effingham County Medical Society, Effingham. Benwood Hotel. Dinner at 6:30 P. M. Dr. George deTarnowsky will speak on "Breast Tumors."

November 14—McLean County Medical Society, Bloomington. Illinois Hotel. Dinner at 6:00 P. M. Dr. Paul S. Rhoads and Dr. Ford K. Hick will conduct a symposium on "Pneumonia."

November 15—Tri-County Medical Society, Vienna, Ill. Dinner. Dr. T. B. Williamson will speak on the State Maternal Welfare Program.

November 15—Coles-Cumberland County Medical Society, Charleston. Dinner at 7:00 P. M. Dr. Alfred J. Cone of St. Louis will speak on "Sinus Disease."

November 16—Bureau County Medical Society, Princeton. Dinner at 6:30 P. M. Dr. Italo F. Volini of Chicago will speak on "Diseases of the Heart."

November 17—Will-Grundy County Medical Society, Joliet. Louis Joliet Hotel. Luncheon 12:00 Noon. Dr. Willard VanHazel of Chicago will speak on "Empyema."

November 17—Douglas County Medical Society, Tuscola. Dinner at 6:30 P. M. C. L. Reed, Ph.D. will speak on "Vitamin Therapy."

November 21—Bureau County Medical Society, Perry Memorial Hospital, Princeton. Dinner at 6:30 P. M. Dr. B. M. Levin will speak on "Surgical Diseases of Childhood."

November 21—Lake County Medical Society, Libertyville. Elizabeth Condell Memorial Hospital, 8:00 P. M. Dr. W. C. Danforth will speak on "Medical Complications of Pregnancy."

November 24—Will-Grundy County Medical Society, Joliet. Louis Joliet Hotel. Luncheon 12:00 Noon. Dr. I. R. Sonenthal will speak on "What the General Practitioner Should Know About Psychiatry."

November 28—Iroquois County Medical Society, Watseka. Dinner. Dr. James T. Case will speak on "X-Ray Diagnosis of the Colon with Reference to Cancer and Its Differential Diagnosis."

November 28—Knox County Medical Society, Galesburg. Galesburg Club. Dinner at 6:30 P. M. Dr. James J. Callahan, will speak on "Fractures" and Dr. William J. Dieckmann will speak on "Sulfanilamide in Obstetrics and Gynecology."

November 28—Rock Island County Medical Society, Moline. Moline Public Hospital, 8:30 P. M. Dr. Louis W. Sauer will speak on "Prevention and Treatment of Enteritis in Infants."

November 30—DeKalb County Medical Society, DeKalb. Luncheon at Hospital at 12:00 Noon.

Dr. Lowell Bushnell—"Management of Puerperium and Complications."

Dr. Joseph Baer—"Prevention and Treatment of Abortion."

Dr. Sidney Levinsohn—"Scarlet Fever."

Dr. John Bigler—"Sulfanilamide."

Dr. Franklin Corper—"Genito-Urinary."

Dr. W. C. Danforth—"Medical Complications of Pregnancy."

December 4—Henry County Medical Society, Kewanee. Kewanee Public Hospital. Dinner at 6:00 P. M. Doctor will speak on "Indications, Contraindications and Technique of Forceps Delivery."

December 5—Lake County Medical Society, Highland Park. Highland Park Hospital, 8:00 P. M. Dr. Davis S. Hillis will speak on "Prevention and Treatment of Abortion."

December 5—Vermilion County Medical Society, Danville. Dinner at Hotel Wolford. Dr. Lindon Seed will speak on "Treatment of Exophthalmic Goiter."

December 7—Ford County Medical Society, Paxton. Hotel Middlecoff. Dinner at 6:30 P. M. Dr. Charles Newberger will speak on "Minimizing the Hazards of Childbirth."

December 11—Lake County Medical Society, Waukegan. St. Therese's Hospital. Luncheon 12:15 P. M. Dr. Craig Butler will speak on "Problems and Diseases of the Newly Born."

December 12—Effingham County Medical Society, Effingham. Benwood Hotel. Dinner at 6:30 P. M. Dr. W. H. Elghammer will speak on "Rational Infant Feeding."

December 12—McLean County Medical Society, Bloomington. Illinois Hotel. Dinner at 6:00 P. M. Dr. Robert S. Berghoff and Dr. Angelo Geraci will conduct a symposium on "Heart Disease."

December 14—Union County Medical Society, Anna, Ill. Dr. David A. Horner will speak on "Treatment of the Postdue Patient."

The Tri-County Medical Society of Southern Illinois (Pope, Johnson and Massac) had their annual meeting, for the election of officers October 18 at Metropolis, Ill. Dr. L. S. Barger, the past president, gave the President's address.

The following officers were elected for the ensuing year: Dr. E. A. Veach, Vienna, Ill., President; Dr. S. Ward, Golconda, Ill., Vice-President and Dr. V. M. Timm of Metropolis, Ill., for Secretary-Treasurer.

V. M. Timm, Metropolis, Ill.

CHICAGO MEDICAL SOCIETY

The next scientific meeting of Chicago Medical Society will be held Wednesday evening, November 15, at the Chicago Woman's Club, 72 East 11th Street, at 8:30 P. M.

Dr. Tom D. Spies of Cincinnati, Ohio, will be the guest speaker. Subject: "Vitamin B and Pellagra."

The clinical meeting preceding the meeting will be a Symposium on Nutritional Deficiency and will be held at Thorne Hall, Northwestern University Medical School. Program is as follows:

9:00 A. M. to 12:00 Noon. Chairman—N. S. Davis, III.

1. Vitamin A Deficiency—Frederic T. Jung.
2. Vitamin D and Calcium Deficiency—Smith Freeman.
3. Vitamin K Deficiency—Warren H. Cole.
4. Vitamin C Deficiency—Chester J. Farmer, Arthur F. Abt.
5. Pellagra and Polyneuritis in Alcohol Addicts—Don C. Sutton, John Ashworth.
6. Round Table Discussion—Tom D. Spies.

Luncheon—DeWitt Hotel, 50c.

2:00 P. M. to 5:00 P. M. Chairman—Chester J. Farmer.

1. Nutritional Deficiencies During Maturity and Old Age—N. S. Davis, III.
2. Nutritional Deficiencies During Pregnancy—Edward Allen.
3. Nutritional Deficiencies During Infancy and Childhood—Bengt Hamilton.
4. Anemia Due to Nutritional Deficiency—Howard L. Alt.
5. Nutritional Deficiencies and Their Relation to Surgery—Charles B. Puestow.
6. Normal Dietary Requirement—Clifford J. Barborka.
7. Commercial Vitamin Preparations—F. C. Bing.

Tri-County Medical Society

The eighteenth Annual Meeting of the Tri-County Medical Society was held in Kewanee, Thursday, October 19, 1939. The attendance of about one hundred were present from surrounding counties, two being present from Rushville having driven one hundred miles for this meeting. Peoria was well represented with between fifteen and twenty doctors. H. M. Camp, M.D., Secretary of the Illinois State Medical Society honored us by being present and made a few remarks after dinner in regard to the Wagner Bill and other economic matters.

The following All-Iowa Scientific Program was presented: 4:00 P.M. Y. M. C. A. Building.

"Malignancies of the Large Bowel and Rectum," Dr. F. B. Peterson, Professor of Surgery, State University of Iowa College of Medicine.

"X-Ray Treatment of Malignancies" (giving his own technique), Dr. H. D. Kerr, Professor Radiology, State University of Iowa College of Medicine.

6:00 P. M. Chicken Dinner—Hotel Parkside.

After-Dinner Speaker—"What Nonsense!" Dr. C. G. Farnum, Poet-Laureate of the Illinois State Medical Society, Peoria, Illinois.

"Value of Urological Findings in Diagnosis of Abdominal Tumors," Dr. N. G. Alcock, Professor of Genito-Urinary Diseases, State University of Iowa College of Medicine.

All of the papers were very interesting and instructive. The essayists certainly did full justice to their subjects and received the commendation of all present.

The 1940 meeting will be held in Monmouth, Illinois.

Marriages

ROBERT F. DEARBORN, Orangeville, Ill., to Miss Barbara Burritt of Rockford, September 2.

WILLIAM N. GILMAN, Wenona, Ill., to Miss Dorris Louise Lee of Normal in August.

OTIS H. LAW, Pontiac, Ill., to Miss Sue Field of Miami, Fla., May 14.

JOSEPH MARCOVITCH, Dwight, Ill., to Miss Lillian Ganzer at Brooklyn, September 6.

BERNARD B. NEUCHILLER, Woodstock, Ill., to Miss Doris Purcell of Equality in Chicago, September 2.

RALPH N. REDMOND, Sterling, Ill., to Miss Katherine Baxter of Cedar Rapids, Iowa, August 1.

CHARLES McCRAW WOOD to Miss Florence Swan, both of Maroa, Ill., at Rochester, Minn., August 15.

ORLAND MILLER SANDERS, Centralia, Ill., to Miss Ruth E. Murphy of Kirksville, Mo., September 25.

Personals

Dr. J. P. Greenhill, Chicago, presented a paper on "Endocrinology in Gynecology" before the Maimonides Medical Society in Detroit, October 24.

Dr. Edmund Jacobson will present a summary of progressive relaxation as a system of assisting bodily and mental recuperation from fatigue and avoidance of mental ills at Boston University on the evening of November 6. This is the 7th lecture of a survey course there entitled, "The Fundamentals of Health Education." On the afternoon of the same day he discussed some practical aspects of relaxation at the Bouvé-Boston School of Physical Education.

Dr. Alfred Ash has recently been appointed head physician at the Sailors' and Soldiers' Home at Quincy, Illinois. Following the death of Doctor C. E. Ehle, several months ago, Doctor Alfred S. Ash, a member of the staff, was promoted to head physician.

Dr. Vernon David addressed the Sangamon County Medical Society in Springfield, subject "Carcinoma of the Sigmoid and Rectum," on November 2.

Dr. M. H. Kronenberg gave a paper on "The General Practitioner's Approach to Industrial Hygiene" before the Winnebago County Medical Society at Rockford on November 3.

Drs. Robert S. Berghoff and Angelo S. Geraci held a heart clinic and presented papers on heart disease before the Madison County Medical Society on November 3.

Drs. Philip H. Kreuscher, James H. Hutton, Clifford Grulee, David H. Hillis, Charles Edwin Galloway, John S. Coulter, LeRoy H. Sloan, and Arrie Bamberger participates in the program of the Southern Illinois Medical Association annual meeting at Mt. Vernon, Illinois, on November 2.

Dr. Lowell D. Snorf addressed the La Salle County Medical Society at Starved Rock on October 26, subject "Functional Disorders of the Stomach and Intestines."

Dr. Italo F. Volini presented a paper on "Sul-fapyridine Treatment of Pneumonia" before the Ogle County Medical Society on October 26.

Dr. Wayne W. Fox gave a paper on "Pneu-

monia" before the Ford County Medical Society on October 26 at Paxton.

Frank C. ValDez will give a talk on "Heart Disease Among Business Men" before the Hinsdale Chamber of Commerce on October 24.

Dr. Herman L. Kretschmer addressed Will-Grundy County Medical Society at a luncheon meeting in Joliet, October 27, giving a talk on "Diseases of the Prostate."

Dr. Samuel E. Munson, Councilor at Large, presented the subject of "Medical Economics" before the Girard Kiwanis Club, September 28.

Drs. Sidney and Bernard Portis presented a program on "The Newer Aspects in the Medical and Surgical Management of Gall Bladder and Liver Disease" before the Scott County Medical Society, Davenport, Iowa, on October 3.

Dr. William S. Sadler discussed "Psychiatry and Tuberculosis" at the annual meeting of the Michigan Tuberculosis Association at Lansing, Michigan, on October 6.

Dr. Carolyn N. MacDonald addressed the Shelby County Medical Society and the Shelby County Federation of Women's Clubs at Shelbyville and Windsor on October 24, subject "Prenatal Care."

Dr. Robert A. Black gave a talk on "Upper Respiratory Infection" before the physicians of Rock Island County in connection with their Maternal Welfare Committee activities on October 24.

Dr. N. S. Davis, III, was invited to talk on Socialized Medicine at a meeting of the Meharry Alumni of Chicago on October 24.

Dr. Ernest A. Pribram discussed "Management of Diabetes Based on Modern Conception of Carbohydrate Metabolism" before the German Medical Society of Chicago, October 3.

At a meeting of the Fulton County Medical Society in Canton October 12 Dr. Leroy H. Sloan, Chicago, discussed "Neurology for the General Practitioner."

The Kankakee County Medical Society was addressed October 12 by Dr. Howard A. Lindberg, Chicago, on the treatment of pneumonia.

Dr. Samuel J. Fogelson, Chicago, addressed the Effingham County Medical Society, Effingham, October 10, on "Treatment of Gastrointestinal Ulcerative Disease Based on Modern Physiology."

At a meeting of the Chicago Pediatric Society October 17 Drs. Arthur F. Abt and Heyworth N.

Sanford spoke on "Hemolytic Disease in Infants" and "Nuclear Icterus" respectively.

At a meeting of the Fulton County Medical Society in Canton September 21, Dr. Carlo S. Scuderi, Chicago, spoke on fractures.

Dr. Paul H. Wosika, Chicago, addressed the Will-Grundy County Medical Society in Joliet October 6 on "Auricular Fibrillation."

Dr. Frank Deneen, Bloomington, spoke before the Madison County Medical Society in Alton October 6 on "Medical Management of Gallbladder Disease."

At a meeting of the Sangamon County Medical Society in Springfield October 5, Dr. Irvine H. Page, Indianapolis, discussed hypertension.

At a meeting of the Peoria City Medical Society, September 19, Dr. Laurence H. Mayers, Chicago, spoke on "Differential Diagnosis of Acute Abdominal Pains."

The Illinois Association for the Crippled, Inc. will hold its third annual meeting at the Knickerbocker Hotel, October 10, under the presidency of Dr. Edward L. Compere.

Dr. Walter C. Alvarez, Rochester, Minn., addressed the Chicago Society of Allergy, October 16 on "Gastrointestinal Allergy" and Dr. Charles K. Maytum, Rochester, Minn., spoke on "Oxygen Therapy and X-Ray Therapy in Asthma."

The Chicago Gynecological Society was addressed October 20, among others, by Drs. Eustace L. Benjamin and William C. Danforth, Evanston, Ill., on "Bipartite Uterus" and Robert M. Grier and Herbert O. Lussky, Evanston, Ill., "Premature Infant Mortality."

At a meeting of the Chicago Pathologic Society October 9 the speakers were, among others, Dr. Samuel A. Levinson, who delivered the presidential address on "History and Progress of the Scientific Work of the Cook County Coroner's Office" and Dr. Edith L. Potter, "Disseminated Ganglioneuroblastoma in a Stillborn Fetus."

At a joint meeting of the Rock Island medical and dental societies, Rock Island, October 10, Dr. Frederick B. Moorehead, Chicago, discussed "Use of Elastic Traction in the Management of Jaw Fractures and in Plastic Surgery."

A symposium on medical economics was presented before the Champaign County Medical Society, October 12 by Drs. Edwin S. Hamilton, Kankakee; Harold M. Camp, Monmouth, and Calvin C. Applewhite, U. S. Public Health Service, Chicago.

Dr. Robert S. Berghoff, Chicago, discussed "Senile Ectasy—A Clinical Discussion of Vascular Changes" before the Cass County Medical Society, Rushville, September 20. The meeting was in honor of physicians of the county who have been in the practice of medicine for fifty years.

Dr. Harry Gideon Wells, professor and chairman of the department of pathology, University of Chicago, delivered the fourth Christian Fenger lecture of the institute and the Chicago Pathological Society on "A Neglected Subject, Adipose Tissue" at the Palmer House, November 13.

The Lee County Medical Society was addressed in Dixon, September 21 by Drs. Guy S. Van Alstyne and James J. Callahan, Chicago, on "The Management of Breast Tumors" and "Fractures About the Elbow," respectively.

At a meeting of the Chicago Laryngological and Otological Society, October 2, the speakers were Drs. Chevalier L. Jackson, Philadelphia, on "Surgical Treatment of Cancer of the Larynx" and Elmer W. Hagens, "Pathology of the Inner Ear in a Case of Deafness from Cerebro-Spinal Meningitis."

Dr. Samuel R. Meaker, professor of gynecology, Boston University School of Medicine, will deliver the eleventh annual William T. Belfield Memorial Lecture of the Chicago Urological Society at the Palmer House, October 26. His subject was "Male Infertility from a Gynecologic Viewpoint."

The Illinois Psychiatric Society was addressed October 5 by Max K. Horwitt, Ph.D., and Drs. Erich Liebert and George A. Wiltrakis, Elgin, Ill., on "Metabolism of the Brain Before and After Insulin and Metrazol Treatment as Determined by Oxygen and Carbon Dioxide Content of the Blood"; Maxwell Gitelson, "Concerning the Direct Psychotherapy of Children," and Jules H. Masserman, "Use of Phantasy Tests in Differential Psychiatric Diagnosis."

Dr. Parker Dooley, assistant professor of pediatrics, Cornell University Medical College, New York, has been appointed assistant professor of pediatrics in the School of Medicine of the Division of Biological Sciences, University of Chicago, it is announced. Dr. Francis B. Gordon, assistant professor of bacteriology at the university, will return to the faculty this fall after a

year's study with Dr. Christopher H. Andrewes at the National Institute for Medical Research, London. Subjects of new courses at the university include forensic medicine, background study of human evolution and abnormalities of voice and speech.

News Notes

—The state department of health announces the establishment of four new district health units. There are now nineteen of these units offering full time service to ninety-six of the 102 counties in the state. The medical officers in charge of the new units are Drs. Abraham J. Levy, Gilman; Cecil A. Z. Sharp, Macomb; Clair L. Johns, Mount Sterling, and Jerome J. Sievers, Pana.

—Dr. Franz Alexander, director, Institute for Psychoanalysis, conducted the first of a series of five seminars for physicians on "Psychologic Problems in General Medical Practice," October 17. Other lecturers will be: Dr. Helen Vincent McLean, October 31, "Neurotic Gains from Illness"; Dr. Thomas M. French, November 14, "Psychologic Aspects of Asthma"; Dr. Leon J. Saul, November 28, "Psychologic Aspects of Hypertension"; Dr. Therese Benedek, December 12, "Premenstrual Emotional Difficulties."

—The clinical section of the Chicago Heart Association held its first meeting of the season at Michael Reese Hospital, October 27. Among the participants were Dr. Soma Weiss, professor of medicine, Harvard Medical School, Boston. Subsequent meetings of the section will be held monthly at one of the heart clinics of the city. Questions should be sent to Dr. Clayton J. Lundy, secretary of the clinical section, Chicago Heart Association, 203 North Wabash Avenue.

—Dr. Ludwig Teleky, formerly of Düsseldorf, Germany, has been appointed technical adviser to the division of occupational hygiene of the state department of public welfare, where he will be associated with Dr. Milton H. Kronenberg, chief of the division. Dr. Teleky graduated at the University of Vienna in 1896. He has served as honorary secretary of the Austrian Central Organization for Prevention of Tuberculosis and editor of its journal and as medical expert in the Workers Accident Insurance of Vienna and Lower Austria. In 1939 Dr. Teleky was awarded the Devoto prize of the Reale Institute Lombardo

di Science and Letters in Milano for the best publication in industrial hygiene.

—Dr. George Otis Whitecotton, superintendent of the Stanford University Hospitals, San Francisco, for the last four years, has been appointed to the same position with the University of Chicago Clinics. Dr. Arthur C. Bachmeyer, director of the clinics and associate dean of the Division of Biological Sciences, has been acting as superintendent in addition to his other duties since the resignation of John C. Dinsmore in 1934. Dr. Whitecotton will manage Billings Hospital, Bobs Roberts Memorial Hospital for Children and the Max Epstein Clinic, while the supervision of Lying-In Hospital and the Home for Destitute Crippled Children will continue under other assistants to Dr. Bachmeyer. Dr. Whitecotton graduated at the Stanford University School of Medicine in 1933.

—A new program of postgraduate education has been adopted by the Illinois State Medical Society which will include several one-day conferences to be held in certain cities of the state. The first conference will be held at the Dunlap Hotel, Jacksonville, November 9, with the following program given by Chicago physicians: Dr. Robert S. Berghoff, "Heart Disease"; Dr. Warren H. Cole, "General Surgery"; Dr. Cleveland J. White, "Dermatology"; Dr. Philip H. Kreuscher, "Orthopedic Surgery"; Dr. Julius H. Hess, "Pediatrics"; Howard J. Shaughnessy, Ph.D., "Public Health"; Dr. James H. Hutton, "Endocrinology"; Dr. Frederick H. Falls, "Obstetrics." Each paper will be followed by discussions. Additional details may be obtained from Dr. Frank Garm Norbury, Jacksonville, or Dr. Berghoff, 30 North Michigan Avenue, Chicago.

—Under the direction of Samuel E. Munson, F.A.C.P., Governor of the American College of Physicians for Illinois, the fifth annual district meeting of the College of Physicians was held at the Norbury Sanatorium, Jacksonville, October 18. Luncheon was served by the Sanatorium at one o'clock to the members of the College, after which followed the scientific program of five papers, given by Fellows of the College—W. H. Newcomb, of Jacksonville, Gerald M. Cline, of Bloomington, Harold Swanberg, of Quincy, Thomas D. Masters, of Springfield, and John R. Vonachen, of Peoria. A joint meeting was held in the evening with the Morgan County

Medical Society at the Jacksonville Country Club, with a dinner at six o'clock; speaker, Dr. James H. Means, F.A.C.P., Jackson Professor of Clinical Medicine, Harvard Medical School, Chief of the Medical Service Massachusetts General Hospital, Past-President of the American College of Physicians—subject, "Thyroid Disease."

—St. Luke's Hospital, Chicago, Illinois, is shortly opening a neuro-psychiatric unit of twenty-five beds. This unit will be one of the first such units in a general hospital. This new division will afford modern treatment for all types of psychiatric and psychoneurotic conditions. Metrazol and insulin therapy, fever treatments, occupational therapy and other modern methods will be in charge of an especially qualified personnel. The new unit will also afford opportunity for psychiatric patients requiring general medical, surgical, or specialty services, to obtain same. The section will be under the general direction of Doctors George Hall, Francis Gerty, Roland Mackay, and the neuropsychiatric staff.

Deaths

WILLIAM ALBERT BERRY, Chicago; Rush Medical College, Chicago, 1903; aged 60; on the staff of St. Bernard's Hospital where he died, August 26, of angina pectoris.

EDWIN JASON BREWER, Shabbona, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; member of the Illinois State Medical Society; for many years mayor; aged 64; died, August 6.

MINNIE AGNES HINCH CONLEY, Wilmette, Ill.; Northwestern University Woman's Medical School, Chicago, 1901; aged 64; died August 31, of chronic myocarditis and arteriosclerosis.

WARNER LATTA CROUCH, Fairview, Ill.; Rush Medical College, Chicago, 1912; a Fellow, A.M.A.; served during the World War; aged 54; died, July 21, in the Graham Hospital, Canton, of uremia.

EDGAR AUGUST DEGENHARDT, Chicago; Chicago Medical School, 1921; a Fellow, A.M.A.; served during the World War; aged 43; died August 14, at his home in Oak Park, Ill., of coronary thrombosis.

TIMOTHY A. DALY, Chicago; Northwestern University Medical School, Chicago, 1897; a Fellow, A.M.A.; aged 65; died, August 16, of heart disease.

JAMES HARRY HAGAN, Lake Forest, Ill.; Drake University Medical Department, Des Moines, 1890; also a pharmacist; aged 76; died, August 27.

HENRY HERTEL, East St. Louis, Ill.; St. Louis Med-

ical College, 1878; member of the Illinois State Medical Society; aged 89; died, August 22.

CARL FREDERICK C. KRAMER, Chicago; University of Illinois College of Medicine, Chicago, 1909; aged 66; for many years on the staff of the Belmont Hospital; died, August 6, of heart disease.

HARRY LAWRENCE RUBIN, Chicago; Loyola University School of Medicine, Chicago, 1922; aged 43; died, July 5, of rheumatic heart disease.

JANET LEAH LONG-McCULLUM, Oak Park, Ill.; Illinois Medical College, Chicago, 1896; aged 79; died, July 30, of carcinoma of the uterus.

NICHOLAS BONIFACE PAUTLER, Waterloo, Ill.; Missouri Medical College, St. Louis, 1893; aged 67; died, July 18.

OSCAR BERNARD PAYNE, Chicago; Chicago Medical School, 1923; aged 50; died, July 3, in the Provident Hospital of pulmonary embolism from thrombophlebitis.

LENA KELLOGG SADLER, Chicago; American Medical Missionary College, Chicago, 1906; a Fellow, A.M.A.; fellow of the American College of Surgeons; past president of the Medical Women's National Association and the Chicago Council of Medical Women; attending gynecologist to the Columbus Hospital; attending surgeon to the Women and Children's Hospital; author of "How to Feed the Baby" published in 1925, author with Dr. W. S. Sadler "The Mother and Her Child" published in 1916 and "Psychiatric Nursing" published in 1937, and other books; aged 64; died, August 8, of carcinoma of the breast.

GEORGE W. SMITH, Peoria, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1887; aged 76; died, July 13, of pneumonia.

CHARLES DERASTUS THOMAS, Peoria, Ill.; Rush Medical College, Chicago, 1888; a Fellow, A.M.A.; fellow of the American College of Surgeons; on the staff of the Proctor Hospital; trustee of Bradley College; aged 75; died, July 18, of myocarditis.

EMIL GEORGE VRTIAK, Chicago; Rush Medical College, Chicago, 1920; a Fellow, A.M.A.; associate clinical professor of medicine at his alma mater; on the staff of the Lutheran Deaconess Home and Hospital; aged 48; died, August 7, in the Presbyterian Hospital of coronary thrombosis.

WILLIAM J. WICK, Chicago; Rush Medical College, Chicago, 1890; member of the Illinois State Medical Society; aged 72; died, July 29, of chronic myocarditis.

G. HOWARD WILSON, Dalton City, Ill.; National Normal University College of Medicine, Lebanon, Ohio, 1896; aged 67; died, August 31, of amyotrophic lateral sclerosis.

LOREN WILDER, Chicago; Rush Medical College, Chicago, 1901; a Fellow, A.M.A.; fellow of the American College of Surgeons; chief of the surgical staff of the Edgewater Hospital; aged 66; died, August 19, of cerebral hemorrhage and arteriosclerosis.

JOSEPH STERLING YOUNT, Chicago; Rush Medical College, Chicago, 1893; aged 72; died, July 17, in the Illinois Central Hospital.

Hundreds of TONS of DUST

fall yearly on each square mile
of large cities

A shockingly large amount of dust—literally hundreds of tons—is deposited annually over each square mile of the larger urban centers. The following figures, from independent studies made over a period of years, are not isolated examples but typical of the atmospheric pollution in large cities.¹

	Tons of dust per sq. mi. annually	In many smaller communities even worse conditions may prevail under any of the following combinations: (1) soft coal, (2) low inland wind velocity, (3) concentrated manufacturing activity, (4) no zoning regulations, (5) no smoke abatement ordinances.
Baltimore	1800	
Pittsburgh	1031	
Salt Lake City	349	
Cleveland	780	
Washington	291	

It is noteworthy that even a nonindustrial city such as Washington has so high an atmospheric pollution, due mainly to smoke from residences and office buildings.

This vast amount of soot and dust cuts off light. Shrader, Coblenz, and Korff, for instance, found that the amount of ultraviolet light in Baltimore was half that 10 miles from the center of the city.¹ Under such circumstances, to rely on winter sunbaths for the treatment of rickets may prove ineffective.

a dependable antiricketic OLEUM PERCOMORPHUM

At a cost to the patient of less than 1 cent a day you can prescribe 1,000 vitamin D units of Oleum Percomorphum, a dose regarded as adequate for the prophylaxis of rickets. At no additional cost the patient receives at least 7,000 units of vitamin A. Furthermore, the natural vitamins A and D in Oleum Percomorphum are in the same ratio as in cod liver oil* but in 100 times the potency. Each gram supplies not less than 60,000 vitamin A units and 8,500 vitamin D

units (U.S.P.). This means that the time-tried benefits of cod liver oil without its necessarily large dose are available even to premature and young infants, who are often most in need of antiricketic therapy. Supplied in 10 and 50 c.c. bottles and 10-drop capsules (boxes of 25 and 100).

*U.S.P. Minimum Standard. ¹U.S. Public Health Bulletin No. 224.

MEAD JOHNSON & COMPANY
Evansville, Indiana, U.S.A.



Announcing KOLPON INSERTS

Newest estrogenic preparation for the modern and really effective treatment of *gonorrheal vulvovaginitis; leucorrhea; non-specific, Trichomonas, or senile vaginitis; pruritus and kraurosis vulvae; leucoplacic vulvitis.*

IMPORTANT FEATURES

Kolpon Inserts combat vulval and vaginal disorders by combined chemical and physiological (estrogenic) effects

SMALL DOSES. Interaction of components obviates large doses. Glucose for immediate production of lactic acid, estrogen for restoration of healthy, mature-type, vaginal mucosa, and a specially selected buffer salt for maintaining optimum acidity in the vagina.

MARKED EFFECTIVENESS. Stimulates healing—increases resistance to invasion—inhibits pathogenic bacterial growth—favors growth of normal vaginal flora—promotes a normal vaginal mucosa.

ECONOMICAL. Decidedly lower in cost than oral or parenteral estrogenic treatment.

PACKAGES: Boxes of 12's; children's and infants' size, 500 I.U.; adults' size, 1000 I.U.

Descriptive literature and complimentary supplies upon request. Please indicate strength desired.

ROCHE - ORGANON, INC., ROCHE PARK, NUTLEY, NEW JERSEY

In Canada: Roche-Organon (Canada) Ltd., 286 St. Paul Street, Montreal, P. Q.

Cut Out This Page and Post Conspicuously

BUYERS INDEX

ABDOMINAL SUPPORTERS

S. H. Camp & Co., Jackson, Mich..... 12

FOODS

Borden Company, 350 Madison Ave., New York..... 12

Coca-Cola Co., Atlanta, Ga..... 12

Corn Products Refining Co., New York City..... 12

R. B. Davis Co., Hoboken, N. J..... 12

Knox Gelatine Laboratories, Johnstown, N. Y. 6

Mead, Johnson & Co., Evansville, Ind..... 17

S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Medical Protective Co., Fort Wayne, Ind..... 24

Physicians Casualty Co., Omaha, Neb..... 21

HOSPITALS

Stokes Hospital, Louisville, Ky..... 21

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 21

PHARMACEUTICALS

American Can Co., 230 Park Ave., New York City..... 3

Armour & Co., Chicago..... 12

Ernst Bischoff, Ivoryton, Conn..... 12

Bovine Company, Chicago..... 12

Bristol-Myers Co., New York..... 14

Carrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J. 22

Ciba Company, Cedar and Washington St., New York City.. 24

Denver Chemical Co..... 29

E. Fougera & Co..... 12

Gold Pharmacal Co., New York City..... 27

Harrower Laboratory 23

Hoffman-LaRoche, Inc., Nutley, N. J..... 2

Hynson, Westcott & Dunning, Charles and Chase Sts., Baltimore 22

Illinois Eye and Ear Infirmary..... 27

Lederle Laboratories, 30 Rockefeller Plaza, New York...30, 31

Lilly, Eli & Co., Indianapolis, Ind..... 16

Maggot Products Co., 222 No. Bank Drive, Chicago..... 12

Morris, Philip & Co., 19 Fifth Ave., New York..... 15

Nutrition Research Laboratories, 332 S. Michigan Ave., Chicago 11

Parke, Davis & Co., Detroit, Mich..... 5

Petrolagar Laboratories, 8134 McCormick Blvd., Chicago... 4

Reed & Carndick, Jersey City, N. J..... 12

Roche Organon, Inc., Nutley, N. J..... 18

Schering & Glatz, Inc., New York City..... 12

G. D. Searle & Co., 4737 Ravenswood Ave., Chicago..... 8

Shaver Corp. of America..... 12

Sharp & Dohme, 111 N. Canal St., Chicago..... 12

E. R. Squibb & Sons, New York..... 9

Frederick Stearns & Sons, New York..... 12

Upjohn Co., Kalamazoo, Mich..... 25

Wm. R. Warner & Co., 113 W. 118th St., New York City 10, 13

Winthrop Chemical Co., 170 Varick St., New York City.. 12

Zemmer Co., Pittsburgh, Pa..... 20

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville, Ill..... 23

Kenilworth Sanitarium, Kenilworth, Ill..... 20

Micell Farm Sanatorium, Kenilworth, Ill..... (32

Milwaukee Sanitarium, Wauwatosa, Wis..... Front Cover

Norbury Sanitarium, Jacksonville, Ill..... 20

North Shore Health Resort, Winnetka..... 23

Rogers Memorial Sanitarium, Oconomowoc, Wis..... 32

Waukesha Springs Sanitarium, Waukesha, Wis..... 20

Weirick's Sanitarium, Elgin, Ill..... 21

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago.. 21

SURGICAL SUPPLIES

Baum Co., New York..... 12

General Electric X-Ray Corp., 2012 W. Jackson Blvd., Chicago 12

The NORBURY SANATORIUM

JACKSONVILLE, ILLINOIS

INCORPORATED and LICENSED

For the Treatment of Nervous and Mental Disorders

DR. ALBERT H. DOLLEA, Superintendent

DR. FRANK GARM NORBURY

DR. SAMUEL N. CLARK

Associate Physicians

Address
Communications

THE NORBURY SANATORIUM, Jacksonville, Illinois



BUILDING ABSOLUTELY FIRE-PROOF

Waukesha Springs Sanitarium

FOR THE CARE AND TREATMENT OF
NERVOUS DISEASES

BYRON M. CAPLES, M. D., Medical Director

FLOYD W. APLIN, M. D.

Waukesha, Wisconsin

E. J. Kelleher, M. D.
Medical Director

Kenilworth Sanitarium

Est. in 1905 by Sanger Brown, M. D.

Built and Equipped for the Treatment of
Nervous and Mental Diseases

Stanley C. Usalis, M. D.
Junior Physician

Christy Brown
Business Manager

Address:
Box 600
Kenilworth, Ill.

**Always
DEPENDABLE
PRODUCTS**

AURI-TUSSIN

. . . A BROMIDE FOR THE TREATMENT OF WHOOPING COUGH
Physicians have found this product a remedy of distinct value. It has brought gratifying success in a series of cases extending over a considerable period of time. Write for literature.

IL 11-39

THE ZEMMER COMPANY, Oakland Station, PITTSBURGH, PA.

Chicago Tumor Institute

21 WEST ELM STREET

Phone: Delaware 5600

Scientific Committee

Max Cutler, M. D., Chairman
Sir G. Lenthal Cheatle, F. R. C. S.
Henri Coutard, M. D.

Arthur H. Compton, Ph. D.
Ludvig Hektoen, M. D.

The Chicago Tumor Institute offers consultation service to physicians and radiation facilities to patients suffering from neoplastic diseases. Graduate instruction in radiotherapy is offered to qualified physicians.

The Radiation Equipment includes:

- One 220 k.v. x-ray apparatus
- One 400 k.v. x-ray apparatus
- One 500 k.v. x-ray apparatus
- One 10 gram radium bomb.

MORPHINE AND OTHER DRUG ADDICTIONS

Selected patients who wish to make good and learn how to keep well; methods easy, regular, humane. Dr. Weirick's Sanitarium, Elgin, Ill.

FOR SALE—Acc't death, \$225 Universal Ultra Violet

Lamp \$25. Instruments, Library, Medicine Cases, Gowns, Fisher Schematic Eye, DeZeng Flashlight Ophthalmoscope, Dental Forceps. Cheney Phonograph. Glynn, 4826 Jackson Blvd., Chicago.

DON'T MENTION CATS!

"Cats, my dear," said the spinster, "I hate the very sight of them. I had a sweet little canary and some cat got that; I had a perfect parrot and some cat got that; I had an adorable fiance, and—oh, don't mention cats to me!"—*Ireland's Saturday Night*.

THE STOKES HOSPITAL

923 Cherokee Road, Louisville, Kentucky

Our ALCOHOLIC treatment destroys the craving, restores the appetite and sleep, and rebuilds the physical and nervous condition of the patient. Liquors withdrawn gradually; no limit on the amount necessary to prevent or relieve delirium.

MENTAL patients have every comfort that their home affords.

The DRUG treatment is one of gradual Reduction. It relieves the constipation, restores the appetite and sleep; withdrawal pains are absent. No Hyoscine or rapid withdrawal methods used unless patient desires same.

NERVOUS patients are accepted by us for observation and diagnosis as well as treatment.

E. W. STOKES, Medical Director. Phones High. 2101-2102



PHYSICIANS CASUALTY ASSOCIATION



PHYSICIANS HEALTH ASSOCIATION

SINCE 1902

SINCE 1912

Hospital
Accident
Sickness

INSURANCE

FOR ETHICAL PRACTITIONERS EXCLUSIVELY
(50,000 policies in force)

LIBERAL HOSPITAL EXPENSE COVERAGE FOR \$10.00 PER YEAR

\$5,000.00 accidental death	For
\$25.00 weekly indemnity, accident and sickness	\$33.00 per year
\$10,000.00 accidental death	For
\$50.00 weekly indemnity, accident and sickness	\$66.00 per year
\$15,000.00 accidental death	For
\$75.00 weekly indemnity, accident and sickness	\$99.00 per year

37 years under the same management

\$1,700,000. INVESTED ASSETS

\$9,000,000. PAID FOR CLAIMS

\$200,000. deposited with State of Nebraska for protection of our members.

Disability need not be incurred in line of duty—benefits from the beginning day of disability.

SEND FOR APPLICATIONS, DOCTOR, TO
400 FIRST NATIONAL BANK BLDG.

OMAHA, NEBRASKA

Radium Rental Service

By

THE PHYSICIANS RADIUM ASSOCIATION

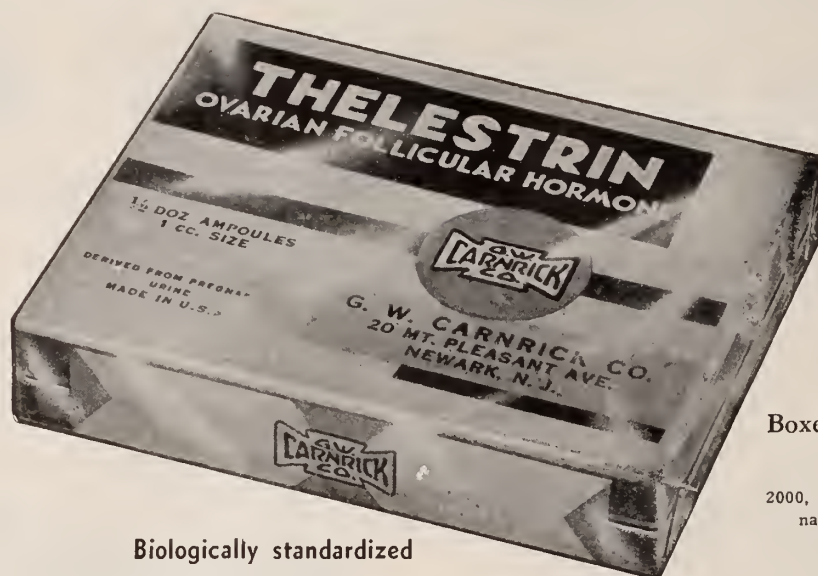
Organized for the purpose of making radium available to physicians to be used in the treatment of their patients. Radium loaned to physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

The Physicians Radium Association

Room 1307—55 East Washington St.,
Pittsfield Bldg., CHICAGO, ILL.

Telephones: Central 2268-2269

Wm. L. Brown, M.D., Director



Boxes of 6 Ampoules

2000, 5000 and 10,000 international units in oil.

Biologically standardized

The remarkable constancy of action of ovarian follicular hormone in experimental work has led to widespread use in therapy. In a number of conditions it has proved to be unusually successful. In relieving the symptoms of the menopause and some types of amenorrhea and dysmenorrhea it has real value.

G. W. CARNRICK CO.

20 Mt. Pleasant Avenue

Newark, New Jersey



Wintertime is Thantis Time

For the relief of throat affections common in winter many physicians have found Thantis Lozenges, H. W. & D., effective.

Thantis Lozenges were developed for medical use in the treatment of throat soreness and irritation and following tonsillectomy. They dissolve slowly, permitting prolonged throat medication, reach areas inaccessible with gargles, are convenient and economical, are antiseptic and anesthetic for the mucous membranes of the throat and mouth.

Thantis Lozenges, H.W.&D.

contain Merodicein, H. W. & D., 1/8 grain, and Saligenin, H. W. & D., 1 grain. They are supplied in vials of 12 lozenges each.

Every H. W. & D. product is investigated and proved chemically, pharmacologically, and bacteriologically, in our laboratories before marketing.



HYNSON, WESTCOTT & DUNNING, INC.
BALTIMORE, MARYLAND

NORTH SHORE HEALTH RESORT

Winnetka, Illinois

A general medical sanitarium equipped for treatment of

Cardiovascular, Renal, Gastro-intestinal and Pulmonary Diseases—Diabetes Mellitus and other Disorders of Metabolism—Anemias—Allergic Conditions—Arthritis—Disabilities Secondary to Old Age—Mild Nervous and Mental Disorders.

Special attention to convalescent care.

Individualized Treatment

Moderate Rates

H. E. Hickman, M. D., *Medical Director*

THE EDWARD SANATORIUM

ESTABLISHED IN 1907 BY DR. THEODORE B. SACHS

Jerome R. Head, M. D., *Medical Director*

Alberto L. de Guevara, M. D., *Associate Medical Director*

NAPERVILLE, ILLINOIS

An institution affiliated with the Chicago Tuberculosis Institute for the treatment, by modern methods, of selected cases of Pulmonary Tuberculosis.

Attractive location and surroundings.

Buildings and equipment modern and adequate for all emergencies.

Well trained staff of physicians and nurses.

Physicians are invited to visit the Sanatorium at any time. They are assured of every professional courtesy and consideration.

For detailed information, rates and rules for admission apply to—

THE CHICAGO TUBERCULOSIS INSTITUTE

Phone Central 8316

Rooms 504

360 North Michigan Ave.

Chicago

Pioneer work . . .

is always hard—many times misunderstood—but it has its rewards. There is a great satisfaction in having accomplished something in our efforts to make it easier for the profession to alleviate some of the ills that beset mankind.

The HARROWER LABORATORY, Inc.

Glendale, California

*Ending a quarter of a century
of pioneer work in the field of*

Endocrinology

ADREMIN

ANABOLIN

MENOCRIN

ENDOTHYRIN

ADRENO-CORTIN

PLESTRIN IN OIL

PROFESSIONAL PROTECTION

SINCE 1899
SPECIALIZED
SERVICE

A DOCTOR SAYS:

"The Medical Protective Company is a Godsend to the profession, and I will see to it that no acquaintance of mine is ever without one of your policies."

THE

MEDICAL PROTECTIVE COMPANY

OF FORT WAYNE, INDIANA

WHEATON, ILLINOIS

CONTENTS—Continued

Psychiatric Problem in General Practice. <i>Frances Hannett, M. D., and Maxwell Gitelson, M. D., Chicago</i>	468
Operative Treatment of Fractures. <i>Paul B. Magnuson, M. D.</i>	475
Hemorrhage from Episiotomy. <i>Charles Finkelstein, M. D., Chicago</i>	482

EDITORIALS

Doctor Townsend.....	393
Rheumatic Fever Reportable.....	393
Horace Wells Discovers Anesthesia.....	398
Rush Medical College Becomes Graduate School.....	400
Dr. Knox on Staff of Soldiers' Home.....	400
Medical Economics. <i>E. S. Hamilton, M. D.</i>	402
Do You Want to Fight? <i>W. P. Saunders, M. D.</i>	403

CORRESPONDENCE

Honolulu from Medical Standpoint. <i>James H. Hutton, M. D.</i>	404
Post Graduate Assembly.....	406
Educational Committee Report.....	407
Illinois Eye and Ear Infirmary.....	408
Maternal Welfare Committee.....	408
Woman's Auxiliary.....	409
Illinois Physicians Attend P. G. Courses.....	409
Nutritional Deficiency.....	410
American Board of Obstetrics.....	411
Pay Your Doctor Week.....	411
American Board of Obstetrics.....	411
U. S. Civil Service.....	411

SOCIETY PROCEEDINGS

Tri-County Medical Society.....	483
Chicago Medical Society.....	484
Marriages.....	484
Personals.....	485
News Notes.....	487
Deaths.....	488



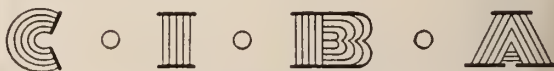
NEVER TO BE FORGOTTEN MOMENTS

The thrready, weakening pulse, the deepening cyanosis, the infrequent, shallow respiratory movements . . . then suspended minutes following intravenous injection, the reappearance of color, stronger pulse, and regular, full respiration . . . the doctor cases up a bit . . . a sigh of relief. NEVER TO BE FORGOTTEN MOMENTS . . . NEVER TO BE FORGOTTEN DRUG—CORAMINE, "Ciba"—for many such cardiac and respiratory emergencies. CORAMINE* is the diethyl amide of nicotinic acid which Spies and co-workers (J.A.M.A. 111:584, 1938) found effective in treating pellagra.



*Trade Mark Reg. U. S. Pat. Off. Word "Coramine" identifies the product as the diethyl amide of nicotinic acid of Ciba's manufacture.

CIBA PHARMACEUTICAL PRODUCTS, Inc.
SUMMIT, NEW JERSEY





Safer in the Hands of the Patient

BECAUSE it rarely produces the psychomotor stimulation frequently observed with natural ephedrine, Solution Racephedrine Hydrochloride (Upjohn) is a safer drug in the hands of the patient. Since nervousness, insomnia, palpitation, and tachycardia rarely follow its use, it may be prescribed for use in the home with little danger of untoward reaction due to overdosage.

Racephedrine Hydrochloride (Upjohn), consisting of d- and l-ephedrine synthetically prepared, is a potent vasoconstrictor. Ap-

plied topically, the 1 per cent concentration in modified Ringer's solution produces sustained nasal decongestion, maintaining improved ventilation and free breathing for several hours. Recommended in the treatment of acute coryza and sinusitis, and for symptomatic relief in hay fever and allergic rhinitis.

Available in 1 ounce dropper bottles for prescription and 16 ounce bottles for office use. Supplied also in $\frac{3}{4}$ grain capsules for oral administration.

Physicians are invited to send for clinical test samples, literature, and bibliography.

SOLUTION

Racephedrine HYDROCHLORIDE



THE UPJOHN COMPANY

KALAMAZOO, MICHIGAN

Makers of Fine Pharmaceuticals Since 1886

ILLINOIS STATE MEDICAL SOCIETY

OFFICERS OF SECTIONS, ILLINOIS STATE MEDICAL SOCIETY, 1939-1940

SECTION ON MEDICINE

E. M. Stevenson, Chairman, Bloomington
W. O. Thompson, Secretary, Chicago

SECTION ON SURGERY

Frederick Christopher, Chairman, Evanston
Charles L. Patton, Secretary, Springfield

SECTION ON EYE, EAR, NOSE AND THROAT

Frank W. Brodrick, Chairman, Sterling
Thomas D. Allen, Secretary, Chicago

SECTION ON PUBLIC HEALTH AND HYGIENE

John J. McShane, Chairman, Springfield
N. O. Gunderson, Rockford, Ill.

SECTION ON RADIOLOGY

Warren E. Furey, Chairman, Chicago
Harry W. Ackemann, Secretary, Rockford

SECTION ON PEDIATRICS

H. Wm. Elghammer, Chairman, Chicago
Orville Barbour, Vice-Chairman, Peoria
Bert I. Beverly, Secretary, Oak Park

SECTION ON OBSTETRICS AND GYNECOLOGY

W. A. Malcolm, Chairman, Peoria
Herbert E. Schmitz, Secretary, Chicago

SECRETARIES' CONFERENCE

A. R. Brandenberger, Chairman, Danville
A. R. Bogue, Vice-Chairman, Rochelle
Carl E. Clark, Secretary, Sycamore

COUNTY SOCIETIES

This list is corrected in accordance with the best information obtainable at the date of going to press. County Secretaries are requested to notify The Journal of any changes or errors

County	President	Secretary
Adams	Donald Root, Mendon	C. A. Hendricks, Quincy
Alexander	Edward Miller, Cairo	J. S. Johnson, Cairo
Bond	D. T. Brown, Mulberry Grove	W. R. Ketterer, Greenville
Boone	K. L. Hood, Belvidere	E. F. Dettmann, Belvidere
Bureau	D. H. Poppens, Princeton	C. R. Bates, Ladd
Calhoun	(See Pike-Calhoun)	
Carroll	R. H. Petty, Mt. Carroll	L. B. Hussey, Savanna
Cass	J. A. McGee, Virginia	Geo. L. Athey, Beardstown
Champaign	R. C. Armstrong, Champaign	W. H. Showengardt, Champaign
Christian	Perry Duncan, Taylorville	R. M. Seaton, Morrisville
Clark	R. B. Boyd, Casey	H. C. Houser, Westfield
Clay	J. P. Shore, Sailor Springs	M. H. Parker, Flora
Clinton	H. B. Warren, Breese	J. Q. Roane, Carlyle
Coles-Cumberland	Martin Bisson, Charleston	W. F. Stafford, Mattoon
Cook	Nathan S. Davis, Ill. Chicago	H. Prather Saunders, Chicago
Crawford	J. H. Price, Robinson	J. W. Long, Robinson
De Kalb	E. W. Telford, Dekalb	Carl E. Clark, Sycamore
De Witt	H. L. Meltzer, Clinton	Wm. R. Marshall, Clinton
Douglas	Carlton R. Smith, Villa Grove	J. O. Cletcher, Tuscola
Du Page	Ernest S. Watson, Elmhurst	A. R. Rikil, Naperville
Edgar	Nettie M. Dorris, Paris	J. J. Murphy, Paris
Edwards	A. J. Boston, Albion	R. L. Motor, Albion
Effingham	S. J. Hanson, Effingham	G. Marshall, Effingham
Fayette	M. Greer, Vandalla	E. A. Kuehn, Vandalla
Ford	S. B. Furby, Paxton	M. D. E. Peterson, Paxton
Franklin	Geo. Burkhardt, Benton	C. P. Holoffe, West Frankfort
Fulton	H. C. Putman, Canton	O. M. Wood, Ipava
Gallatin	J. C. Murphy, Ridgway	E. W. Burroughs, Ridgway
Greene	W. T. Stickley, White Hall	W. H. Garrison, White Hall
Hancock	R. R. Loomis, Warsaw	Blair Kelly, Ferris
Hardin	L. D. Dusch, Golconda	H. H. Watson, Elizabethtown
Henderson	C. J. Eads, Oquawka	Elmer T. Swann, Oquawka
Henry	D. E. Meier, Kewanee	P. J. McDermott, Kewanee
Iroquois	N. O. Hungness, Sheldon	L. E. Messman, Onarga
Jackson	Ben Fox, Carbondale	Edward K. Ellis, Murphysboro
Jasper	D. R. Martin, Newton	R. S. Wishard, Wheeler
Jefferson Hamilton	C. J. Anslinger, Mt. Vernon	Andy Hall, Mt. Vernon
Jersey	H. R. Gledhill, Jerseyville	R. G. Mindrup, Jerseyville
Jo Davless	G. C. McGinnis, Warren	R. E. Logan, Galena
Johnson	Wm. Thompson, Cypress	E. A. Veach, Vienna
Kane	H. T. Mostrom, Batavia	K. M. Manougian, Elgin
Kankakee	A. L. Nickerson, Kankakee	Chas. Allison, Kankakee
Kendall	No Society	
Knox	Louis N. Tate, Galesburg	Wm. F. Maley, Galesburg
Lake	L. E. Bovik, Waukegan	M. T. Brown, Zion City
La Salle	W. P. Fread, Ottawa	Roswell T. Pettit, Ottawa
Lawrence	E. M. Cooley, Lawrenceville	Ralph B. Armitage, Lawrenceville
Lee	C. G. Pool, Compton	J. L. Tavenner, Dixon
Livingston	H. L. Lockner, Chatsworth	J. G. Barnheiser, Pontiac
Logan	Le Roy Branom, Lincoln	Lee N. Hamm, Lincoln
McDonough	R. O. Stites, Industry	Wm. M. Hartman, Macomb
McHenry	Geo. H. Pfueger, Crystal Lake	J. F. Harris, Richmond
McLean	H. W. Wellmerding, Bloomington	H. P. Sloan, Bloomington
Macon	S. J. Wilkinson, Decatur	F. R. Martin, Decatur
Macoupin	J. H. Finney, Girard	J. J. Grandone, Gillespie
Madison	R. C. Berry, Livingston	D. D. Monroe, Alton
Marion	H. E. Ryan, Centralia	E. N. Neber, Centralia
Mason	F. J. Corey, Havana	D. V. Auld, Havana
Massac	W. S. Dixon, Metropolis	J. H. Gann, Brookport
Menard	Irving Newcomer, Petersburg	R. E. Valentine, Tallula
Mercer	L. E. Robinson, Aledo	V. A. McClanahan, Aledo
Monroe	E. T. Lark, Columbia	J. A. Werth, Waterloo
Montgomery	Geo. A. Telfer, Hillsboro	H. F. Bennett, Litchfield
Morgan	G. L. Drennan, Jacksonville	Friedrich Engelback, Jacksonville

(Continued on page 31)

(Continued from page 28)

Moultrie	S. H. Ambrose, Livingston.....	W. B. Kilton, Sullivan.
Ogle	G. S. Henderson, Holcomb.....	A. R. Bogue, Rochelle.
Peoria	H. B. Magee, Peoria.....	C. W. Magaret, Peoria.
Perry	Geo. H. Gutridge, DuQuoin.....	H. I. Stevens, Tamaroa.
Platt	W. N. Sievers, White Heath.....	J. M. Holmes, Monticello.
Pike	C. P. McRaven, Pittsfield.....	F. N. Wells, Pittsfield.
Pope	S. P. Ward, Golconda.....	L. S. Barger, Golconda.
Pulaski	Oscar Karraker, Olmsted.....	Otis T. Hudson, Mounds.
Randolph	C. O. Boynton, Sparta.....	W. W. Fullerton, Steeleville.
Richland	E. L. Willamson, Calhoun.....	Paul C. Weber, Olney.
Rock Island	Louis Ostrom, Rock Island.....	Paul Youngberg, Moline.
St. Clair	Lawrence A. Ryan, East St. Louis.	R. F. Sondag, East St. Louis.
Saline	Neva Skelton, Eldorado.....	Robert Ferrell, Eldorado.
Sangamon	E. L. Bernard, Springfield.....	E. H. Ennis, Springfield.
Schuyler	Geo. C. Bates, Rushville.....	A. W. Ball, Rushville.
Scott	No Society.	
Shelby	Theo. Thompson, Shelbyville....	C. H. Hullick, Shelbyville.
Stephenson	John J. Grant, Freeport.....	C. M. Becker, Freeport.
Tazewell	C. A. Cox, Morton.....	C. A. Nelson, Pekin.
Union	M. E. Cosand, Dongola.....	W. J. Benner, Anna.
Vermillion	Robert Clements, Danville.....	A. R. Brandenberger, Danville.
Wabash	E. P. Keneipp, Mt. Carmel.....	H. A. Elkins, Mt. Carmel.
Warren	H. L. Kampen, Monmouth.....	Chas. P. Blair, Monmouth.
Washington	P. B. Rabenneck, Nashville.....	G. A. Green, Nashville.
Wayne	G. Ray Hill, Fairfield.....	J. T. Blakely, Fairfield.
White	Frank C. Sibley, Carmi.....	J. A. Legier, Carmi.
Whiteside	Neal J. Marquis, Sterling.....	G. J. Pohly, Rock Falls.
Will-Grundy	Geo. Woodruff, Joliet.....	Earl Leimbacher, Joliet.
Willamson	R. L. Kane, Herrin.....	J. W. Tldwell, Herrin.
Winnebago	N. C. Bullock, Rockford.....	Wm. K. Ford, Rockford.
Woodford	Ernest Pearson, Eureka.....	W. S. Morrison, Minonk.

The Staff of THE ILLINOIS EYE AND EAR INFIRMARY

offers a short course in

REFRACTION AND DISEASES OF THE EYE

for general practitioners. The registration is limited to six men with the following qualifications:—

- Registrant must be a regular licensed practitioner of Medicine in Illinois.
- Must be located in general practice outside of Cook County.
- Must be located not less than 25 miles away from an established Eye Physician.

The course will be given at the Illinois Eye and Ear Infirmary, 904 W. Adams St., Chicago on December 4, 5, 6, 7, and 8, 1939, from nine to five. Cost of course, \$25. Details on application to

The Dean of Instruction, Illinois Eye and Ear Infirmary, 904 W. Adams St., Chicago.

Book Reviews

OFFICE GYNECOLOGY. By J. P. Greenhill, M. D. Chicago. The Year Book Publishers, Inc. 1939. Price \$3.00.

This is the only work available devoted exclusively to office gynecology.

Every operative and nonoperative procedure in gynecology that may be carried out in a medical office is detailed in this "ultrapractical" manual—the only up-to-date volume devoted exclusively to office gynecology. Gynecologists and obstetricians will find it invaluable as a compact, original statement of the latest authentic principles of practice. But the book was not written primarily for specialists. Above all, it is a manual of practice and an office-reference for the general practitioner—so full of common-sense suggestions and answers to everyday questions, so clearly and succinctly written, that the reader will turn to it frequently, especially when confronted with cases that are somewhat puzzling.

Stressing everyday problems encountered in the average office, most of its space devoted to specific instructions on treatment, down to the minutest details. Greenhill's "Office Gynecology" is intended to help every physician who treats women to add new, effective procedures to his personal armamentarium and to carry them out successfully in accordance with the soundest, most advanced thought of the day. This finely illustrated handbook of 406 pages presents



IN WHOOPING COUGH



ELIXIR BROMAURATE

IS GIVING EXCELLENT
THERAPEUTIC RESULTS

Cuts short the period of the illness and relieves the distressing, spasmodic cough. Equally valuable in other Persistent Coughs and in Bronchitis and Bronchial Asthma. In four-ounce original bottles. A teaspoonful every 3 to 4 hours.

THIRD EDITION:

A new, interesting booklet (3rd edition) on "Whooping Cough and Its Treatment" is just off the press. Drop us a card for a copy. Sent with our compliments. Gold Pharmacal Co., New York

Book Reviews

PRIMER OF ALLERGY. By Warren T. Vaughan, M. D. with illustration by John P. Tillery. St. Louis. The C. V. Mosby Company. 1939. Price \$1.50.

This work is intended as a guide book for those who must find their way through the mazes of this strange and tantalizing state. The work is created to fulfill a need which the author has experienced for a small a-b-c of the subject from which his patients may obtain a sufficient insight into their problem to be able to co-operate intelligently in the effort to bring them relief from their vexing symptoms.

A TOPOGRAPHIC ATLAS FOR X-RAY THERAPY. By Ira I. Kaplan, M. D., and Sidney Rubinfeld, M. D. Chicago, Illinois. The Year Book Publishing Company, Inc., 1939. Price \$4.00 post paid.

This work is unique—the first atlas of its kind ever published. Yet the basic idea of it is so practical, and it has been so finely realized in the execution, that everyone concerned with x-ray therapy—the radiation therapist, his assistants and associates, the general internist, the surgeon and every specialist who administers or prescribes x-ray therapy—will wonder how the profession has managed without such a work for so long.

Fifty-five superb full-page plates showing the proper settings of patients for irradiation of various internal organs are the principal contents of this beautiful and preeminently practical atlas. Each plate shows at a glance four things: 1, the visible anatomic landmarks; 2, the palpable internal landmarks; 3, the internal part or parts to be irradiated; 4, the exact placement of the treatment-cone with respect to these landmarks so as to direct the dosage to the organ and tissues to be treated and avoid danger to surrounding and intervening structures. The landmarks illustrated are those that are most readily visible and palpable. The settings depicted are not the only technics that can be employed, for the drawings are planned to demonstrate best the surface outlines of the respective organs and to apply readily to any technic which the therapist may decide to use.

Printed in outline form opposite each plate, so as to be easily and conveniently read while the picture is being referred to, is a description of the anatomic landmarks, position of the cone and its direction—in other words, all the fundamental factors of the plan of treatment except dosage which, of course, has no place in an atlas. These outlines, free of superfluous verbiage, enable the reader to identify at once the essential points of technic shown in the plates.

TEACHING WHOLESOME LIVING IN THE ELEMENTARY SCHOOL. By Alma A. Dobbs, M. A. New York. A. S. Barnes & Company. 1939. Price \$2.50.

In this work the author has treated her subject in three parts—Part One discusses the Point of View as regard Principles of Growth and Fostering Child Growth—Part Two discusses the Curriculum as regards General Consideration, Instruction and Emphases—Part Three outlines Specific Phases describing the com-

mon life activities of the child with particular reference to the determination of the quality of living. These specific phases may be correlated with any type of instructional program.

The Appendix contains a brief discussion of Alcohol, Health Knowledge Tests and Sex Education.

DISEASES OF THE FOOT: By Emil D. W. Hauser, M. S., M. D., Assistant Professor of Bone and Joint Surgery, Northwestern University Medical School; Attending Orthopedic Surgeon, Passavant Memorial Hospital, Chicago. With a Foreword by Sumner L. Koch, M. D. 472 pages with 263 illustrations on 172 figures, some in colors. Philadelphia and London: W. B. Saunders Company. 1939. Cloth, \$6.00 net.

This is a well written but brief treatise, it is an admirable introduction to the subject. The author has gone much farther than any other American or English surgeon and prepared a comprehensive volume that represents the work of many years of intensive study and wide experience in the care of abnormalities and disabilities of the foot. The section on Pes. Valgoplanus alone is an invaluable contribution to our understanding of this common, and often ineffectively treated condition.

NUTRITION AND DIET IN HEALTH AND DISEASE: By James S. McLester, M. D., Professor of Medicine, University of Alabama, Birmingham, Alabama. Third Edition, Entirely Rewritten. 833 pages. Philadelphia and London: W. B. Saunders Company. 1939. Cloth, \$8.00.

This work has been entirely rewritten. Only a few paragraphs here and there from the earlier editions, have been retained.

The relatively large space given to a consideration of the nature and physiological influences of the several nutritive substances and to the discussion of the disordered physiology is, in the author's opinion justified.

AN INTRODUCTION TO DERMATOLOGY. By Norman Walker, M.D. and G. H. Percival, M.D. Tenth Edition. With 102 plates and 96 Illustrations in the Text. Baltimore. The Williams & Wilkins Company. 1939. Price, \$7.00.

This work has gone through ten editions in rather rapid succession, this speaks volumes in its favor. In this edition the subject has been brought strictly up-to-date.

PSYCHOBIOLOGY AND PSYCHIATRY. By Wendell Muncie, M.D. with a Foreword by Adolf Meyer, M.D. with 69 Illustrations. St. Louis. The C. V. Mosby Company. 1939. Price, \$8.00.

The work is aimed primarily for the use of students and has been stripped of much detail which long experience finds useful but which is likely to be overwhelming and confusing to beginners. The material is covered mostly in the obligatory and elective courses in psychobiology and psychiatry at the Johns Hopkins Medical School.



Autumn Diseases

— are mostly those of the Respiratory Tract.

In Tonsillitis, Acute Bronchitis, Influenza, Tracheitis, Laryngitis, Pharyngitis, the use of the medicated cataplasm, Antiphlogistine, stimulates the local capillary circulation and, through it, the circulation in the deeper structures. Decongestion of the affected tissues is thereby aided and early resolution facilitated.

Sample on request

Antiphlogistine

THE DENVER CHEMICAL MANUFACTURING COMPANY
163 VARICK STREET • NEW YORK CITY

In the treatment of pneumonia—

SULFAPYRIDINE

Lederle

THERE IS AN EVER-INCREASING ACCUMULATION of clinical reports supporting the value and importance of Sulfapyridine in the treatment of pneumococcal pneumonias.

It is recommended that after the taking of sputum for type-determination, Sulfapyridine be given to all cases as soon as the clinical diagnosis of pneumonia is made unless otherwise specifically contraindicated.

The use of Sulfapyridine has in no way altered the necessity for bacteriologic control. Etiologic diagnosis and cultural study is basic to sound therapeutics and should be considered as much a part of the present-day treatment of pneumococcal pneumonias as the employment of specific agents and the use of proper supportive measures.

Daily blood counts and urinalysis should be made for evidence of hemolytic anemia, leukopenia and hematuria. One of the most serious complications that should be looked for is interference with kidney function.

It is indicated that the combined use of Sulfapyridine and Specific Serum provides an advantageous means of treatment. If the physician elects to attempt treatment with Sulfapyridine alone, he should observe the patient closely and if at the end of 18 to 24 hours an adequate response has not occurred, serum should be administered immediately.

The booklet "Treatment of Pneumococcal Pneumonias with Sulfapyridine and Type Specific Antiserums *Lederle*," a new detailed discussion of the proper procedure for the use of Sulfapyridine and Type Specific Serum, has recently been issued and will be sent upon request.

PACKAGES:

"SULFAPYRIDINE *Lederle*"

Bottles of 50 tablets—0.5 gram (7.7 grains)
Bottles of 100 tablets—0.5 gram (7.7 grains)
Bottles of 1000 tablets—0.5 gram (7.7 grains)

Bottles of 50 capsules—0.25 gram
Bottles of 100 capsules—0.25 gram
Bottles of 1000 capsules—0.25 gram

Therapeutic Sera for all 32 types of Pneumonia are available

LEDERLE LABORATORIES, INC.
30 ROCKEFELLER PLAZA NEW YORK, N. Y.

EXPERIMENTAL BACTERIOSTASIS AND PHAGOCYTOSIS

Pneumococcus Type 7 (mouse virulent)—Inoculum
and exposure constant

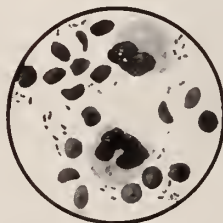
CONTROL

Pneumococci numerous;
No capsule swelling;
No phagocytosis.



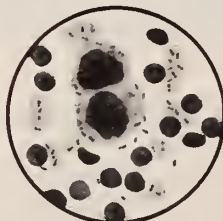
SULFAPYRIDINE (1:10,000)

Pneumococci few;
No capsule swelling;
No phagocytosis.



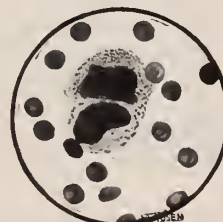
RABBIT SERUM (5 units)

Pneumococci evident;
Capsules swollen;
Partial phagocytosis.



SULFAPYRIDINE (1:10,000) AND SERUM (5 units)

No free pneumococci;
Complete phagocytosis.



Pneumococcus Typing Sera . . .

Lederle

THE GENERAL ADOPTION OF SULFAPYRIDINE has been a gratifying and outstanding event in the treatment of pneumonia. It would seem contrary to accepted principles to treat cases of pneumonia, however, without first determining the pneumococcus type.

Furthermore, evidence is now accumulating which shows that in some cases the administration of type-specific sera following treatment with sulfapyridine produces the most favorable results. It appears likely that a combination of sulfapyridine and specific serum may become the established method in the treatment of pneumonia.

The Neufeld method of pneumococcus typing has found general acceptance because of its rapidity and accuracy. Its efficiency can be judged from the recent report of Dowling and Abernethy (Ann. Int. Med., July, 1939) of 180 cases of pneumonia in which the Neufeld test was confirmed by another test and found to be correct in 179 cases (99.4 per cent. accuracy).

"Pneumococcus Typing Sera *Lederle*" can be obtained in tubes containing five individual tests, or in 1 cc. vials, and is available in six combinations for making preliminary tests and in thirty types for making specific diagnosis of pneumococcus types.

**LEDERLE
LABORATORIES, INC.**
30 ROCKEFELLER PLAZA, NEW YORK, N. Y.



Lederle Laboratories are sponsors of large scientific exhibits on Allergy and Pneumonia in the Medicine & Public Health Building at the New York World's Fair.

Rogers Memorial Sanitarium

Oconomowoc, Wisconsin

Phone 448

RESIDENT PHYSICIANS

James C. Hassall, M. D.

Medical Director

Donald A. R. Morrison, M. D.

Owen C. Clark, M. D.



For the treatment of NERVOUS and MENTAL DISEASES

Fireproof building; modern, home-like accommodations; beautiful views over lakes. Sixty acres of park. Every essential for treatment provided, including hydro-, physio- and occupational therapy under supervision of trained personnel. Number of patients limited, assuring personal attention from the resident staff.

BOARD OF TRUSTEES

JAMES C. HASSALL, M. D.

FREDERICK PABST

Oconomowoc, Wis.

T. H. SPENCE

MITCHELL MACKIE

MACKEY WELLS

Milwaukee, Wisconsin

PETER BASSOE, M. D.

Chicago, Illinois

W. S. MIDDLETON, M. D.

Madison, Wisconsin

MICHELL FARM



MICHELL FARM

Mild Nervous and Mental
Diseases

MICHELL SANITARIUM

Severe Nervous and Mental
Drug and Alcoholic Cases

Licensed by the State of Illinois

George W. Michell, M.D., Medical Director; Helen C. Coyle, M.D., Psychiatrist

Wm. H. Holmes, M.D., Chicago, Med. Con.

Fritz Moellenhoff, M. D., Neuropsychiatrist and Psychoanalyst

Selected Cases of Schizophrenia (Dementia Praecox) received for Insulin Shock Therapy

Literature on Request • 106 N. Glen Oak Ave., Peoria, Illinois

Illinois Medical Journal

OWNED AND PUBLISHED BY THE MEDICAL PROFESSION OF ILLINOIS
Office of Publication 715 Lake Street, Oak Park, Illinois; Editorial and Executive Office 6221 Kenmore Ave., Chicago

Vol. 76, No. 6

DECEMBER, 1939

\$3.00 a Year

CONTENTS:

Editorials (For Titles See Extended Table of Contents) 489

ORIGINAL ARTICLES

Progestin in Obstetrical Complication. *Frederick H. Falls, M. D., Chicago*..... 507

Obstruction of Common Duct by Stones. *Warren H. Cole, M. D., Chicago*..... 512

Health Education re Practice of Medicine. *W. W. Bauer, M. D., Chicago*..... 519

Rheumatic Fever in Children, Etiology. *George L. Drennan, M. D., Jacksonville*..... 524

Signs and Symptoms of Rheumatic Fever. *King Woodward, M. D., Rockford*..... 526

Treatment of Rheumatic Fever in Children. *II. William Elghammer, M. D., Chicago*..... 527

Pathology of Rheumatic Fever. *Stanley Gibson, M. D., Chicago*..... 530

Stuttering as an Emotional and Personality Disorder. *Meyer Solomon, M. D., Chicago*..... 536

Etiology and Diagnosis of Gastric Hemorrhage. *M. M. Montgomery, M. D., Chicago*..... 542

The Obstetrical Rectal Examination. *Armond Jean Mauscy, M. D., Chicago*..... 549

Fistula re Mastoidectomy. *Harold V. Wadsworth, M. D., and George H. Woodruff, M. D., Joliet*.. 547

Care of the New Born. *Ralph A. Loar, M. D., Bloomington* 551

(Continued on page 24)

Entered as Second-class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 8, 1879. Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 8, 1917, authorized July 15, 1918.

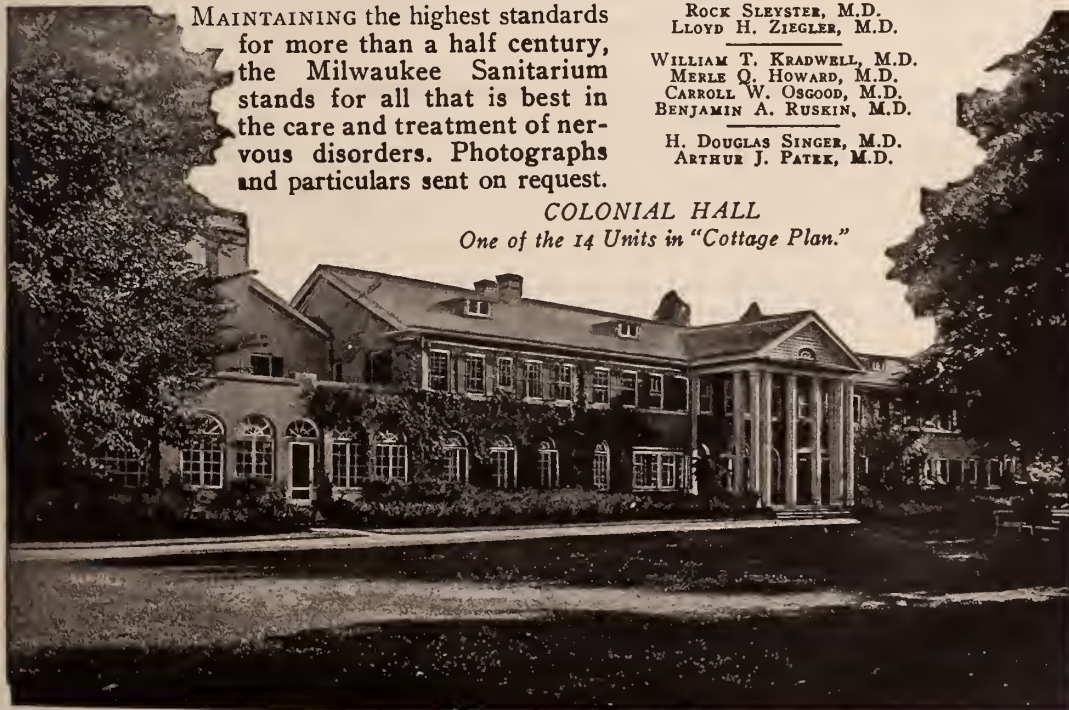
MILWAUKEE SANITARIUM, Wauwatosa, Wis. For NERVOUS DISORDERS

(Chicago Office—1823 Marshall Field Annex
Wednesdays, 1-3 P. M.) Central 1162.

MAINTAINING the highest standards for more than a half century, the Milwaukee Sanitarium stands for all that is best in the care and treatment of nervous disorders. Photographs and particulars sent on request.

ROCK SLEYSER, M.D.
LLOYD H. ZIEGLER, M.D.
WILLIAM T. KRADWELL, M.D.
MERLE Q. HOWARD, M.D.
CARROLL W. OSGOOD, M.D.
BENJAMIN A. RUSKIN, M.D.
H. DOUGLAS SINGER, M.D.
ARTHUR J. PATEK, M.D.

COLONIAL HALL
One of the 14 Units in "Cottage Plan."



WE ARE HAPPY TO ANNOUNCE

DOCA

*NEW HORMONE TREATMENT FOR CORTICAL DEFICIENCIES,
THE LATEST DEVELOPMENT IN ROCHE-ORGANON RESEARCH*



Supplied in 10-cc vials and in 1-cc ampuls,
boxes of 3 and 6. In both dosage forms
the solution contains 5 mg. in 1 cc.

Doca is the pure, crystalline, acetic acid ester of synthetic desoxycorticosterone. It is intended for the treatment of Addison's disease and other deficiencies of the adrenal cortex.

One of the serious objections to cortin preparations has been their high cost. Doca, the pure synthetic substance, has unusually high potency and is much more economical. A 1-cc dose of Doca solution (5 mg. of the pure substance) is therapeutically equivalent to at least 10 cc of the best cortin preparations.

The use of Doca is followed by sodium and chloride retention, increased potassium excretion, increased plasma volume and total plasma content of sodium and chloride, increase in body weight and blood pressure, and improved appetite and strength.

DOSE: In Addison's disease, 5 to 10 mg. daily by intramuscular injection. Experimentally in other deficiencies, 3 to 5 mg. a week by intramuscular injection. In acute disorders of marked severity, such as surgical shock, burns, the crisis of Addison's disease, etc., large doses may be necessary, as much as 20 to 40 mg. a day, by intramuscular injection.

ROCHE-ORGANON, INC.



NUTLEY, NEW JERSEY

In Canada: Roche-Organon (Canada) Ltd., 286 St. Paul Street West, Montreal, Quebec

METHODS FOR QUANTITATIVE ESTIMATION OF THE VITAMINS

III. Measurement of Vitamin A Activity

● It was early recognized that vitamin A deprivation in animals resulted in cessation of growth or—if long continued—in the appearance of a characteristic eye condition known as xerophthalmia (1). These two pathologic effects were both utilized in the first methods proposed for quantitative estimation of this essential food factor.

The earliest techniques for determination of vitamin A were similar in that they all first provided for depletion of the body stores of vitamin A of the rat by restriction of the animals to basal rations free from or quite deficient in the vitamin. In the "rat growth" method, the vitamin A activity of the material under assay was estimated by feeding graded dosages to animals depleted of the vitamin (as gauged by cessation of growth) and recording the ensuing growth response (2). In the "curative technique," the incidence of xerophthalmia served as the criterion of vitamin A depletion (3), and vitamin A activity was estimated by determining the dosage of the test material necessary to establish cure of xerophthalmia.

Techniques were also gradually developed which in some instances embodied features of both the growth and curative methods. Still another technique based on the continuous appearance of cornified epithelial cells in vaginal smears—a further characteristic of vitamin A deficiency in female rats—was evolved (4). Further research showed that colorimetric and spectrographic methods may be adapted to the estimation of vitamin A activities of specific materials (5).

Of all methods for estimation of vitamin A in foods, the rat growth technique appears to be favored today (6). Gradual improvements and refinements—as well as recognition of the existence of provitamins A—have led to development of the growth method now included in the U. S. Pharmacopeia XI. This method requires that young rats weighing 40 to 50 grams (at an age not exceeding 28 days when placed on a vitamin A deficient ration) shall manifest symptoms characteristic of vitamin A deficiency within a period of 25 to 45 days. Rats properly depleted of vitamin A reserve are assembled in negative control groups receiving no supplement, reference groups receiving graded doses of the standard reference material, and assay groups receiving graded doses of the assay material. During the ensuing period of not less than 28 days, the test animals are fed daily doses of the proper supplements. The body weights of the animals are recorded at frequent intervals during and at the end of the assay period. From the average gains in body weight of rats in the assay and reference groups, dosages of assay and reference materials, and the vitamin A activity of the standard of reference, the vitamin A activity of the assay material is calculated.

Many researches (7) have established that commercial canning procedures are without significant effect upon either the provitamins A or vitamin A in foods. Consequently, the canned varieties of foods noted for their vitamin A activities provide valuable, convenient and economical sources of this dietary essential.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

- (1) 1913. J. Biol. Chem. 16, 423 and 255.
- (2) 1928. J. Biol. Chem. 78, 671.
- (3) 1931. J. Dairy Sci. 14, 229.
- (4) 1927. J. Biol. Chem. 73, 153.
- (5) 1938. J. Am. Med. Assoc. 111, 245.

- (6) 1936. The Pharmacopeia of the United States, Eleventh Decennial Revision, page 478.
- (7) 1929. Ind. Eng. Chem. 21, 347.
- 1936. J. Am. Diet. Assoc. 12, 231.
- 1936. Mass. Agr. Expt. Sta. Bull. No. 338.
- 1938. Nutrition Abstracts and Reviews, 8, 281.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the fifty-fourth in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

12 Reasons why!

... THE EMULSION **Petrolagar** FOR CONSTIPATION!

#9

**Assures a more normal
fecal consistency.**

1. Petrolagar is more palatable. Easier to take by patients with aversion to plain oil—may be thinned by dilution.
2. Miscible in aqueous solutions. Mixes with gastrointestinal contents to form a homogeneous mass.
3. Does not coat intestinal mucosa. Petrolagar is an aqueous suspension of mineral oil — oil in water emulsion.
4. No accumulation of oil in folds of mucosa.
5. Will not coat the feces with oily film.
6. Does not interfere with secretion or absorption.
7. Augments intestinal contents by supplying an unabsorbable fluid.
8. More even distribution and dissemination of oil with gastro-intestinal contents.
10. Less likely to leak.
11. Provides comfortable bowel action.
12. Makes possible five types of Petrolagar to select from to meet the special needs of Bowel Management.

Petrolagar — Liquid petrolatum 65 cc. emulsified with 0.4 Gm. agar in a menstruum to make 100 cc.



Petrolagar

Petrolagar Laboratories, Inc. • 8134 McCormick Boulevard • Chicago, Illinois



PROLONGED EFFECT • PROLONGED RELIEF

Adrenalin in Oil facilitates treatment of chronic asthma. It is also valuable in the management of other conditions in which relief—with a minimal number of injections—is needed.

The effect of an intramuscular injection of Adrenalin in Oil (0.5 to 1.5 cc.) usually lasts for 8 to 12 hours. This produces amelioration of symptoms for a corresponding time in chronic asthma, urticaria, serum disease, and angio-neurotic edema.

Each cubic centimeter contains 2 milligrams of basic Adrenalin suspended in sterile peanut oil. The oil coats particulate material, delays absorption, and thereby increases duration of action.

• • •

The word "Adrenalin" identifies the active principle (Epinephrine) of Suprarenal Glands, manufactured by Parke, Davis & Company. Adrenalin in Oil is available at drug stores in 1-cc. ampoules, boxes of 12, 25, and 100.

*Descriptive literature
will be mailed on request.*



PARKE, DAVIS & COMPANY • Detroit, Michigan
The World's Largest Makers of Pharmaceutical and Biological Products



Well Tolerated and Safer **FOR INFANTS AND CHILDREN**

SOLUTION Racephedrine Hydrochloride (Upjohn), one per cent, is especially suitable for use in infants and children. The modified Ringer's solution base is soothing and nonirritating. It produces sustained nasal decongestion without smarting. Its isotonic modified Ringer's solution vehicle does not retard ciliary activity, hence does not interfere with this primary defense barrier. Accidental aspiration is unattended by the potential danger associated with some oily vehicles. Because systemic absorption from the nose (or upon swallowing) does not provoke the sympathetic stimu-

lation and associated restlessness frequently observed with natural ephedrine, Solution Racephedrine Hydrochloride (Upjohn) may be instilled as frequently as indicated with little likelihood of adverse reaction.

Racephedrine Hydrochloride (Upjohn) contains *d*- and *l*-ephedrine synthetically prepared, and is available in 1 per cent solution in 1 ounce dropper bottles for prescription purposes and in 16 ounce bottles for office use; also for oral administration in $\frac{1}{4}$ gr. capsules in bottles of 40 and 250.

Physicians are invited to send for clinical test samples, literature, and bibliography.

SOLUTION

Racephedrine
HYDROCHLORIDE



UPJOHN

THE UPJOHN COMPANY
KALAMAZOO, MICHIGAN

Makers of Fine Pharmaceuticals
Since 1886





AIR RAID ON S.M.A.

Just Before the Can is Sealed . . .

To prevent oxidation or change in the physical or chemical composition of S.M.A., the atmosphere is exhausted from the container and is replaced with nitrogen which keeps the contents — S.M.A. — fresh and sweet in any climate.



The physical and chemical character of S.M.A. is always the same, providing a vitamin A, B₁, and D activity in each feeding that is constant throughout the year.

S.M.A. feedings are always uniform whether they are prepared in Maine or California.

NORMAL INFANTS RELISH S.M.A. — DIGEST IT EASILY AND THRIVE ON IT!

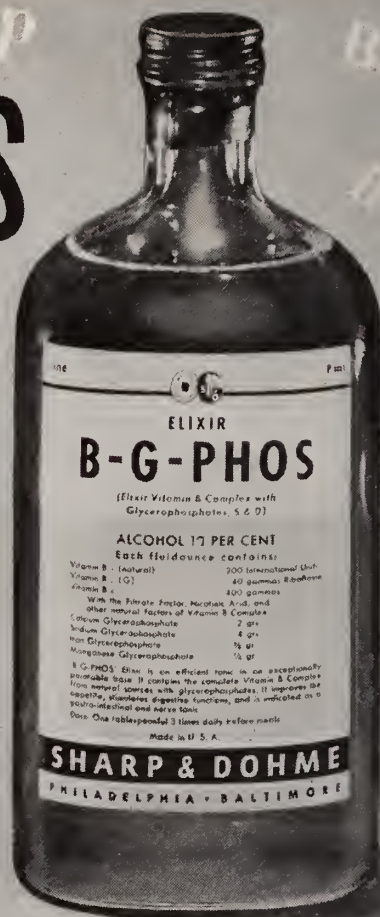
S. M. A. is a food for infants — derived from tuberculin tested cows' milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride;



altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and in physical properties.

ELIXIR B-G-PHOS

a palatable
stimulating tonic
of natural
Vitamin B-complex
with glycerophosphates



ELIXIR B-G-PHOS is indicated in the anorexia and sluggish digestion so frequently encountered during the winter months, and so often due to Vitamin B deficiency . . . for Elixir B-G-Phos supplies the *whole* Vitamin B-complex from *natural* sources together with *glycerophosphates*. It stimulates the appetite, improves digestive functions and aids in correcting B-complex avitaminosis.

The unusual palatability of Elixir B-G-Phos permits administration over long periods, to insure adequate intake of all factors of Vitamin B-complex. For optimum utilization of these factors, proper mineral intake is important, especially manganese. This mineral and others are incorporated in Elixir B-G-Phos.

Each fluidounce of Elixir B-G-Phos contains:

Vitamin B ₁ (natural)	200 Int. Units
Vitamin B ₂ (G)	40 gammas Riboflavin
Vitamin B ₆	400 gammas
with the Filtrate Factor, Nicotinic Acid and other natural factors of Vitamin B-complex	
Calcium Glycerophosphate	2 gr.
Sodium Glycerophosphate	4 gr.
Iron Glycerophosphate	3/8 gr.
Manganese Glycerophosphate	1/4 gr.
Alcohol	17%

Sig.: One tablespoonful t.i.d.—a. c.
Supplied in pints and gallons



"For the Conservation of Life"

SHARP & DOHME

Pharmaceuticals Mulford Biologicals
PHILADELPHIA



YOU SAVE your patients money when you recommend Navitol. This blend of specially selected, highly refined fish liver oils has the same high Vitamin D content and an even higher Vitamin A potency than halibut liver oil with viosterol—yet costs only about one-half as much.

High Potency — Small Dosage . . . Navitol is so potent that the average daily prophylactic dose is only 10 drops or one 3-minim capsule. Such dosage supplies a total of 9400 units of Vitamin A and 1700 units of Vitamin D (U. S. P. XI).

Both vitamins are supplied in *natural* form exclusively.

Economical . . . When purchased in the 50-cc. dropper bottle, the average daily prophylactic dose costs *less than a cent a day*. Those using the capsules will find the 250-capsule box most economical, representing a saving of about 50 per cent in comparison with the box of 25 capsules.

Navitol is available in 10-cc. and 50-cc. dropper bottles, and in boxes of 25, 100, and 250 capsules.

*For literature address the Professional Service Department
E. R. Squibb & Sons, 745 Fifth Avenue, New York, N. Y.*

NAVITOL SQUIBB NATURAL
VITAMIN OIL



When the Concentrating Function of the Colon is too Efficient

Typical of the obstinate case of constipation is accentuation of water deficiency (dehydration)—“the condenser-like function of the colon is too efficient and the feces become too concentrated and small in bulk to act as a proper stimulus to defecation.”*

As initial treatment for these stubborn cases may we suggest the most recent development

MUCILOSE GRANULES WITH KASAGRA

RATIONALE:

MUCILOSE (55%)—a hemicellulose obtained from *Plantago loeflingii*. Well recognized in constipation and colitis management for its remarkable ability to swell in the presence of

liquid and form a mucilaginous, easily passed, bulky mass.

KASAGRA—4 minims to the teaspoonful. Each minim of Stearns Kasagra represents the gentle tonic-laxative properties of one grain of cascara sagrada bark.

Dose: One to two teaspoonfuls, followed by copious water.

For Gradation in Treatment **3 Available Forms**

Mucilose Granules with Kasagra, 4 oz. bottles
Mucilose Flakes, 4 oz. and 16 oz. bottles
Mucilose Granules, 4 oz. and 16 oz. bottles

*Welch, P. B., and Kauders, F. H.: The Physiologic Approach to the Correction of Constipation, South. M. J. 31: 709 (July) 1938.

FREDERICK STEARNS & COMPANY

DETROIT, MICHIGAN

NEW YORK KANSAS CITY SAN FRANCISCO WINDSOR, ONTARIO SYDNEY, AUSTRALIA



FREDERICK STEARNS & COMPANY
Detroit, Michigan

Dept. IM12

Please send me a supply of Mucilose Granules with Kasagra for clinical test.

Name..... M.D.

Address.....

City..... State.....

When are Concentrated Sugars Indicated in Milk *Mixtures?*

INFANT
FEEDING
PRACTICE
POINTERS

Answers to Physicians' Questions

1. Q. How many calories are in a tablespoon of Karo?
A. 60 calories.
2. Q. How many calories are in a tablespoon of powdered dextrins-maltose-dextrose?
A. 29 calories.
3. Q. How many calories are in an ounce of Karo?
A. 1 oz. vol.—120 cal.
1 oz. wt.—90 cal.
4. Q. Is Karo hypo-allergenic?
A. Yes, Karo is free from proteins likely to produce allergic manifestations.
5. Q. Is Karo economical?
A. Yes, Karo costs much less than most other carbohydrates.



Concentrated feeding is indicated in certain digestive and nutritional disturbances as well as in convalescence. The quantity of feeding given at one time is reduced and the caloric intake is maintained by concentrated mixtures prepared from evaporated, dried or acid milk and Karo Syrup.

Karo Syrup is a mixture of concentrated sugars. When you consider that volume for volume, Karo Syrup furnishes twice as many calories as similar sugar modifiers in powdered form, you realize how strongly saturated Karo is in dextrins—maltose—dextrose.

*"Infants Thrive
ON
Karo Formulas"*

Infant feeding practice is primarily the concern of the physician; therefore, Karo for infant feeding is advertised to the Medical Profession exclusively. For further information, write Corn Products Sales Company, Dept. I-12, 17 Battery Place, New York City, N. Y.

What comes first in a formula?

SOME INFANT FOODS place their major emphasis on *digestibility*. Others strive primarily for an *analysis* similarity to breast milk.

However, BIOLAC—the new liquid modified milk for infants—quite properly meets the infant's *nutritional* needs first... by adjusting the major *biological* differences between cow's milk and breast milk.

But that's not all. In the sum of its ready digestibility, simplicity, and safety as well, BIOLAC actually resembles breast milk more closely than any artificial food or cow's-milk modification heretofore available for infant feeding.

Only The Breast Is Simpler Or Quicker Than Biolac

And here's all there is to feeding BIOLAC at any age:

Dilute BIOLAC with an equal part of boiled water. Offer 2½ ounces per pound of body weight daily. (Slightly more dilute formulas are, of course, recommended during the newborn period, or when changing from other foods.)

BIOLAC is marketed only through professional channels, sold only in drug stores. No feeding directions are given to the laity. Send coupon for further information.



Biolac



MADE BY
THE BORDEN COMPANY

THE BORDEN COMPANY,
Prescription Products Division, Dept. I-129-L,
350 Madison Avenue, New York, N. Y.

Please send me without obligation a copy of "Biolac, a New Liquid Modified Milk for Infants."

Name _____

Address _____

City _____ State _____

Traditional **WINTHROP** *quality*
reflected in three new
VITAMIN PREPARATIONS

AFAXIN*
Capsules

Brand of VITAMIN A

Highly concentrated and purified preparation of vitamin A. Supplied in bottles of 25 capsules, each containing 10,000 U.S.P. units in oil. Prepared by a process of molecular distillation which removes certain fatty acids and products of rancidity believed to be largely responsible for the objectionable taste and odor of fish oil.

Biologically standardized and manufactured in accordance with our rigid requirements.

BETAPLEXIN*
Elixir

Brand of VITAMIN B COMPLEX

Palatable, easy flowing preparation of the vitamin B complex, derived from cereals and fortified with synthetic crystalline vitamin B₁ (thiamine chloride) and vitamin B₂ (G, riboflavin). Supplied in bottles of 4 fluidounces. Each fluidrachm represents 0.375 mg. (125 international units) of vitamin B₁ hydrochloride; 100 gammas (40 Bourquin-Sherman units) of vitamin B₂; 200 gammas of vitamin B₆; filtrate factor value 54 (Jukes-Lepkovsky); also a good source of pellagra preventive factor and other factors of vitamin B complex.

POLYTAXIN*
Capsules

Five Fine Vitamins

Brand of VITAMIN MIXTURE [A, B₁, B₂, C, D]

A combination of highly purified vitamin A with pure crystalline vitamins B₁, B₂, C and D₂. Supplied in boxes of 25 and 100 capsules. Each capsule contains 10,000 U.S.P. units of vitamin A; 150 international units (0.45 mg.) of crystalline vitamin B₁ hydrochloride; 20 Bourquin-Sherman units (50 gammas) of crystalline vitamin B₂; 500 international units (25 mg.) of crystalline vitamin C (ascorbic acid); and 1000 U.S.P. units of crystalline vitamin D₂.

Sample and literature sent to physicians on request.

Winthrop Chemical Company, Inc.

Pharmaceuticals of merit for the physician

NEW YORK, N. Y.

WINDSOR, ONT.

Factories: Rensselaer, N. Y. - Windsor, Ont.



*The experience
of many specialists
is embodied in every*
CAMP SUPPORT

WHEN a chemist prepares a formula he must know the content and purpose of every ingredient used. In the same way, S. H. Camp & Company are thoroughly versed in every detail that contributes to the efficiency of a Scientific Support. The quality of the exclusive fabrics—the spacing of eyelets, the intricate lacing, the resiliency of the garters, the effectiveness of each tiny snap—all are subjected to expert analysis and careful laboratory research before they are accepted.

The anatomical correctness of each Camp garment is assured through the cooperation and advice of specialists in each branch of the profession. For example, the sacro-iliac support illustrated was designed and constructed on advice of leading orthopedic specialists. Two sets of lacers with separate adjustments assure increased tightness low on the trunk and such staying power as is required above. Camp Maternity Supports are the result of constant research work and consultation with obstetricians. In addition to protecting the abdominal walls, back and pelvis from strain, Camp Maternity Supports help the patient maintain her balance. Camp Supports for postoperative, mammary gland, visceroptosis, hernial and other conditions are based on similar expert knowledge.

As a result of this thorough, painstaking policy of seeking authoritative advice on even the small details, Camp Supports are approved by the American College of Surgeons and accepted by the Council on Physical Therapy of the American Medical Association.

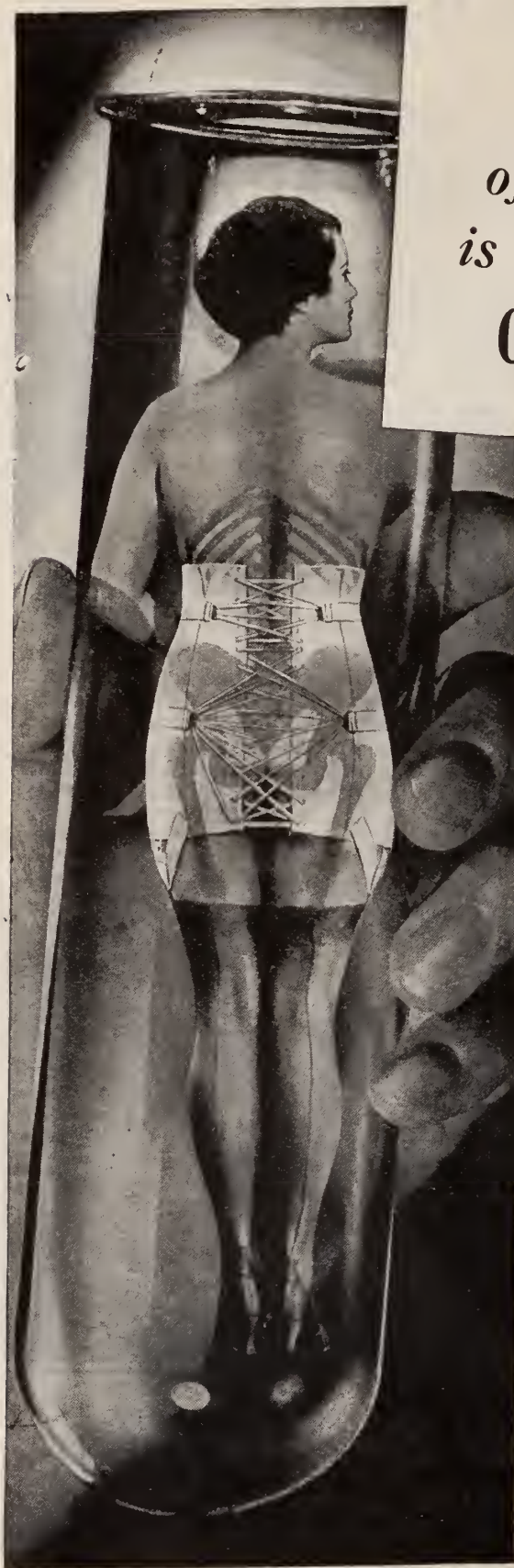
CAMP MADE *Supports*

S. H. CAMP & COMPANY
JACKSON, MICHIGAN

OFFICES IN:

New York, Chicago, Windsor, Ont., London, Eng.

World's largest manufacturers of surgical supports



OLD BELIEFS ABOUT IRON



MODERN *Iron* THERAPY

HEMATINIC PLASTULES

Hematinic Plastules possess the characteristics of a modern iron therapy—small dosage, easy assimilation and consistently good results—at a reasonable cost to the patient.

Each Hematinic Plastule Plain provides five grains of *ferrous* iron plus the vitamin B complex of concentrated yeast, which is available for immediate conversion into hemoglobin.

Hematinic Plastules are exceptionally well tolerated, even in anemias of pregnancy and other cases of secondary anemia where the gastro-intestinal tract is likely to be upset.

SUGGESTED DOSAGE:

One Hematinic Plastule Plain three times daily

Two Hematinic Plastules with Liver Concentrate three times daily

TWO TYPES:

Hematinic Plastules Plain

Hematinic Plastules with Liver Concentrate

In bottles of 50's and 100's



THE BOVINE COMPANY • 8134 McCORMICK BOULEVARD • CHICAGO, ILLINOIS

RETROSPECTION

The past year has seen a broadened participation in major research, has brought increased aptitude in pharmaceutical manufacture, and represents another period of progress made possible by the physician's belief in Lilly quality. Worthy of confidence, Eli Lilly and Company will continue to practice the rules of conduct which have become such an inherent part of the organization's structure.

ENTORAL (*Oral Cold Vaccine, Lilly*)

'Entoral' vaccination brings about a reduction of sixty percent or more in the incidence of colds. Respiratory infections that are contracted after immunization are usually of lessened severity. Pulvules 'Entoral' are supplied in bottles of 20 and 60.

ELI LILLY AND COMPANY
INDIANAPOLIS, INDIANA, U. S. A.



ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 76

OAK PARK, ILL., DECEMBER, 1939

No. 6

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

GENERAL OFFICERS, 1939-1940

PRESIDENT.....JAMES H. HUTTON, Chicago
PRESIDENT-ELECT.....J. S. TEMPLETON, Pinckneyville
1ST VICE-PRESIDENT.....J. S. LUNDHOLM, Rockford
2ND VICE-PRESIDENT.....F. H. MULLER, Chicago
SECRETARY.....HAROLD M. CAMP, Monmouth
TREASURER.....A. J. MARKLEY, Belvidere

THE COUNCIL

E. H. Weld.....1st District, Rockford 1941
E. C. Cook.....2nd District, Mendota1941
J. S. Nagel.....3rd District, Chicago1940
L. E. Day.....3rd District, Chicago1942
Percy E. Hopkins...3rd District, Chicago1941
E. P. Coleman.....4th District, Canton1940
Ralph P. Peairs.....5th District, Normal1940
T. B. Knox.....6th District, Quincy 1942
I. H. Neece.....7th District, Decatur1940
C. E. Wilkinson...8th District, Danville1940
Andy Hall.....9th District, Mt. Vernon...1942
Henry G. Horstman.10th District, Murphysboro ...1942
Edw. S. Hamilton..11th District, Kankakee1941
S. E. Munson.....At Large, Chicago1942
Rolland L. Green...At Large, Peoria 1940
Rollo K. Packard...At Large, Chicago1941
Chairman of the Council.....L. E. Day, Chicago

EDITOR

CHARLES J. WHALEN.....25 E. Washington St., Chicago

GENERAL COUNSEL

EDWIN W. RAWLINS.....77 West Washington St., Chicago

LEGISLATIVE COMMITTEE

JOHN R. NEAL, *Chairman*.....Springfield

MEDICO-LEGAL COMMITTEE

J. R. BALLINGER, *Chairman*.....2724 W. North Ave., Chicago
R. O. HAWTHORNE, *Secretary*.....Kankakee

EDUCATION COMMITTEE

R. R. FERGUSON, *Chairman*...4013 N. Milwaukee Ave., Chicago
MISS JEAN McARTHUR, *Secretary*.30 N. Michigan Ave., Chicago

PERMANENT HISTORIAN

IRVING S. CUTTER.....301 East Chicago Ave., Chicago

SCIENTIFIC SERVICE COMMITTEE

ROBERT S. BERGHOFF, *Chairman*..30 N. Michigan Ave., Chicago
HAROLD M. CAMP, *Secretary*.....Monmouth

PUBLICATION COMMITTEE

HARRY J. STEWART, *Secretary*.....715 Lake St., Oak Park

Outside of editorial or allied views or statements that are the authoritative actions of the Illinois State Medical Society, the organization denies responsibility for opinions and statements published in the ILLINOIS MEDICAL JOURNAL. Views expressed by the various authors and views set forth in various departments in the JOURNAL represent the views of the writers.

State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original article, advertising copy, cuts and all communications relating to advertising to ILLINOIS MEDICAL JOURNAL, 30 N. Michigan Avenue, Chicago.

Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is \$3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. \$4.00 per year for all foreign countries included in the postal union. Canada, \$3.50. Single current copies, 50 cents.

Editorials

Merry Christmas

Good friends, wherever you may be,
And be it east or west,
Upon the plain, beside the sea,
Whatever place the place may be,
Some place you love the best,
Across the silence let us call
To each of you, and wish you all
A MERRY CHRISTMAS!

THE PLATFORM OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association advocates:

1. The establishment of an agency of federal government under which shall be coordinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.

2. The allotment of such funds as the Congress may make available to any state in actual need for the prevention of disease, the promotion of health and the care of the sick on proof of such need.

3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.

5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.

6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.

7. The continued development of the private practice of medicine, subject to such changes as

may be necessary to maintain the quality of medical services and to increase their availability.

8. Expansion of public health and medical services consistent with the American system of democracy.

THE SOCIALIZATION OF PHARMACY

In the midst of our tribulations caused by the encroachment of governmental groups on the private practice of medicine it is well to view the problems of our associates—the pharmacists. They have, as far as we know, peacefully endured for a good many years the extension into their stores and refrigerators of the governmental distribution of medicines. They were early lulled into acquiescence by such sweetened words as “public service” and “the defeat of communicable disease.” Actually, of course, the distribution of these medicines has always been a problem of the public health department. But there are many sections of large cities and a great many towns in which inadequate governmental facilities exist for the storage of biological products. Not only have facilities been lacking but even where refrigerators are located the untrained personnel, often firemen or police officers, have not regularly appreciated the necessity of keeping freshly dated supplies on hand. We dislike to believe it, but physicians irked by long trips and the improper care of the state biologicals have probably been the chief reason why the druggists have stocked them. For our pharmacal friends are an accommodating lot. They are also a competitive group and not wishing to see all the doctors in a community going into one store many have secured the “privilege” of stocking the state supplies. For all these and possibly other reasons, then, one may see in many of the pharmacies in any part of the state preparations for free distribution resting side by side with privately owned supplies which they hope to sell. They cost the druggist the same as his own material for clerk handling and refrigeration and are a nuisance because of the attached requisitions to be filled out. These requisitions one will at once recognize as an inseparable part of state medicine.

These free preparations are not small in number. Indeed, to list them would constitute a fitting reproach to anyone who insists we are in

an age of therapeutic nihilism. The number is about forty. It includes such diverse products as typhoid vaccine, diphtheria prophylaxis and treatment packages, silver nitrate ampoules, anti-syphilitic chemicals and sulfapyridine. As one goes through the list it is seen to contain practically everything but aspirin, barbitol and morphine. The recent addition of sulapyridine was, oddly enough recommended by a committee of private physicians who are independent of the health department for their incomes. Their objective was doubtless good; the drug is expected to be of value in conquering pneumonia. But the factor of cost, which might be a reason for providing antipneumococcic serum, hardly needed to be considered with sulfapyridine and it does add another burden to the druggist's competition for a livelihood. The fundamental question about the use of any of these state provided drugs in our present nonsocialistic economy is the patient's ability to pay. The *logical consumer* of these drugs is the person who cannot afford to buy the preparation which is essential for the protection of his health and therefore of the community about him. So far no adequate method of limiting the distribution of prophylactic and treatment supplies to the logical consumer has been set up by the department of health. Undoubtedly a lot of chiseling is going on in the use of the state supplies. Since the government is at least in theory principally interested only in the attack on communicable disease it is not so much the victim of the diversion of use of its supplies as is the pharmacist. He stores, preserves, replaces and fills out paper for the products and then sees it used on persons who could afford to buy private material.

We suspect there are physicians who view the socialization of medicine as an unmitigated evil who are not sufficiently aware of the approach of that evil through the pharmaceutical route. We object strenuously to the use of free dispensaries and governmental agencies by persons who could afford private care. Are we as interested in assisting the druggist to avoid these same degrading influences? As we stand now at the beginning of the year 1940 we may expect to see new and important chemicals developed in the fight against disease. Will they be added to the current thirty or forty preparations distributed by the state? Or if new prepa-

rations are slow in coming in will a committee on malaria, for instance, reach back into ancient discoveries for quinine and atabrine? "Lo, the poor Indian" will become matched by "Lo, the poor druggist" for he will have to be salaried by the government to compensate for the time and loss he endures distributing or competing with free medicines.

MEDICINE IN RUSSIA

Medical men and lay persons alike are discussing two books about medicine under the soviet. You may pay your money and you may take your choice. Quotations speak for themselves. Henry E. Siegrist, is a physician, a routined medical historian and a man classified as "firmly committed to socialized medicine and a planned and regimented economy." He wrote his book after spending two summers in Russia, and says frankly that he had the aid of leading authorities in his compilations.

Eugene Lyons, an American newspaper man of known communistic ideas, whose appointment as a press representative was welcome to Stalin by the United Press bureau that sent Lyons abroad, wrote the other book. He lived in Russia for seven years by which time his communistic convictions were experienced out of him and the Russian government asked his recall. Lyons' descriptions of medicine under the Soviet are based on personal experience. Wrote Siegrist:

Nobody can deny that Soviet medicine, in the short period of twenty years and under most trying circumstances, has stood the test and has created powerful measures for the protection of the people's health. It has demonstrated that socialism works in the medical field too, and that it works well, even now, in the early beginnings of the social state. It is a system that is full of promise for the future—for a very near future."

Wrote Lyons:

"We came, unluckily, to know a lot more about Soviet medical practice than most of our colleagues. Like the 'stable' currency and the wonderful educational methods, the socialized medicine under the official statistical surface was a snarl of contradictions, shortages, and ineptness.

Doctors and dentists regarded their obligatory work for the state as an exaction and depended on private practice for their real income. The more famous medical specialists did not budge for less than fifty or a hundred rubles; often it required 'pull' to get their services at any price. The public health service was by all odds inferior to the free public and charitable health services available to the poor in cities like New York or Chicago."

Among personal experiences in the book, Mr. Lyons describes those of his wife, who became ill and who was taken to Botkinsky Hospital. This section concludes: "Billy improved rapidly, despite the special care, and was soon well enough to watch the conduct of that hospital by way of sociological diversion. If I had not been there day after day and seen some of the primitive and careless procedure myself, I should have thought the details she told me were the effects of delirium. Only a few of the women were trained nurses—the others were ignorant girls of the servant type. They stomped up and down corridors and banged doors and called for one another in loud voices. Except under unusual circumstances, bed linens were changed once a week. The blankets were not washed but merely disinfected, so that they were crusted with the dirt and vomit of previous patients. The precious rules prohibited the bringing of linens, blankets, or other accessories from outside. But by devious means I smuggled in everything Billy needed, and doctors, nurses, patients came to her ward to inspect and exclaim over the fleecy American blankets; the hospital buzzed with the news of a foreigner who changed her sheets, her nightgown, and even her pillow-cases, every day.

"The doctors, Billy thought, were capable but overworked. I succeeded—again by outraging the blessed rules—in having our own physician, who was familiar with her case, treat her. As soon as she could be moved safely she returned home.

"Ever after, the glowing reports of socialized medicine in Russia in American books and magazines have been a source of amusement to us. Always we have wished their authors only one punishment—a week or so as patients in the second-best hospital in Russia."

HEALTH UNDER HITLER

Readers Digest, December issue, 1939, contains an article under the above title. It is condensed from "HEIL HUNGER!" a book that is about to be published by Dr. Martin Gumpert, German physician and author; formerly head of the Berlin City Dispensary for deformity diseases.

This work will prove a disappointment to health insurance propagandists who fondly look to Europe for the pattern of socialized medicine to cure all our ills.

Up to going to press we have not been granted permission to republish. Perhaps many of our readers would prefer to read the article in the original translation as it appears in the Digest.

We quote the following paragraph as illustrative of the informative character of the article: "The whole range of children's infectious diseases such as scarlet fever, spinal meningitis and infantile paralysis have increased sharply. Scarlet fever cases in 1933 were 73,830; in 1937, 117,544. In 1933, there were 17,340 cases of diphtheria; in 1937, 146,733. The diphtheria mortality rate is now more than four times that in the United States. Yet Germany, whose scientists gave diphtheria antitoxin injections to the world, once had one of the lowest mortality rates.

WINGATE JOHNSON WILL BE THE EDITOR

Beginning January, 1940, the medical society of North Carolina will initiate the publication of the State Medical Journal. The publication will be under the editorial management of Dr. Wingate M. Johnson, of Winston-Salem, who will be assisted by a capable board of associates.

Heretofore the proceedings of the State Society were published in the form of transactions. The new arrangement will be a great step forward. A Journal comes nearer to the every day life of an active medical organization. That the journal will be a success goes without saying.

Dr. Johnson is an up-to-date scientific practitioner, an unusually keen student of medical economics and is especially well equipped to take over the duties of editor of an active up-to-date and progressive State Medical Journal.

The ILLINOIS MEDICAL JOURNAL welcomes the

official publication of the North Carolina State Medical Society to the family of medical journals. The number of medical journals is already large, reaching into the hundreds.

The increasing volumes of medical literature tax the ability of medical libraries to carry and store them on the shelves. The new journal will add much scientific information to our mounting accumulation of worth while literature.

PUBLISHERS OPPOSE WAGNER BILL

At its convention in April, 1939, the *American Newspaper Publishers' Association*, adopted the following report of its Committee on Social Security, as presented by its Chairman, Mr. A. V. Miller of the New York Herald Tribune:

"We would urge the members to take a very definite interest in the subject of Health Insurance legislation which matter was brought to your attention by the Committee in Bulletin No. 7001. Senator Wagner has introduced a bill to inaugurate a Health Insurance Program with an initial annual expenditure of \$80,000,000 but with obligations provided that will soon run the annual expenditure under this program into the hundreds of millions. There is no warrant or justification for enacting such legislation at this time and if this proposal is to be delayed it will be necessary to make known your desires and position on the subject as soon as Congress undertakes consideration of the Wagner Bill."

PAPERS FOR THE 1940 ANNUAL MEETING

The 1940 annual meeting of the Illinois State Medical Society will be held in Peoria on May 21, 22, 23, 1940. This will be the Centennial Meeting of the Society and those responsible for the success of the meeting are planning an unusual program.

The Committee on Scientific Work composed of the Chairman and Secretary of each of the Scientific Sections held a meeting in Chicago recently to discuss tentative plans for the 1940 program. There will be more general sessions next year than for past meetings, and a few changes in the usual routine. These changes will be announced in the near future.

Any member of the Illinois State Medical Society who desires to present a paper before any of the Sections is requested to get in touch with the proper Section officer as soon as possible. Give the subject you desire to discuss, send a short synopsis of the subject matter, and be sure to write the proper section officer. The list will be given in this article.

Owing to the fact that the papers to be presented before each section must be limited in number the officers of the Sections are anxious to schedule only those papers which in their judgment will be of greatest general interest to all members. They must necessarily be critical in making these selections.

OFFICERS OF SCIENTIFIC SECTIONS

Section on Medicine: Edgar M. Stevenson, Chairman, Bloomington; W. O. Thompson, Secretary, 700 North Michigan avenue, Chicago.

Section on Surgery: Frederick Christopher, Chairman, 2650 Ridge avenue, Evanston; Charles L. Patton, Secretary, Springfield.

Section on Eye, Ear, Nose and Throat: Frank W. Brodrick, Chairman, Sterling; Thomas D. Allen, Secretary, 122 South Michigan avenue, Chicago.

Section on Public Health and Hygiene: John J. McShane, Chairman, Springfield; N. O. Gunderson, Secretary, Rockford.

Section on Radiology: Warren W. Furey, Chairman, 6844 Oglesby avenue, Chicago; Harry W. Ackemann, Secretary, Rockford.

Section on Pediatrics: H. Wm. Elghammer, Chairman, 5307 Hyde Park boulevard, Chicago; Bert I. Beverly, Secretary, 715 Lake street, Oak Park.

Section on Obstetrics and Gynecology: W. A. Malcolm, Chairman, Peoria; Herbert E. Schmitz, Secretary, 25 East Washington street, Chicago.

Any member of the Illinois State Medical Society who would like to present a paper before any of these sections should write to either the Chairman or the Secretary of the Section in which he is interested. One of the officers of each Section resides in Cook County, and the other in the downstate area, and it is desirable for Chicago members to write the Chicago officer, and the downstate doctors should write the downstate official in order that the papers may be fairly well divided between the two groups.

The matter of selecting speakers to appear on

the Scientific Programs lies entirely in the hands of the section officers. They alone should be contacted by any member desiring to appear on the programs.

There will be a number of speakers scheduled to appear at general sessions, which means that all sections will join for a meeting, and have subjects scheduled which are not highly technical but of general interest to all physicians.

In writing to the proper section officer you should send your name and address, the title and subject you desire to discuss and an outline or synopsis of the subject matter of your paper. This will better enable those who are responsible for the development of the program to make a selection for a well balanced group of papers.

The section officers who are responsible for the selection of papers to be scheduled before their respective sections, the local committees of the Peoria Medical Society and their Committee on Arrangements, and the officers and committees of the Illinois State Medical Society are all anxious to arrange an outstanding meeting to celebrate the one hundredth anniversary of the founding of the Society.

There will be an unusual number of fine scientific exhibits of general interest to physicians. In addition, the Hall of Health will be held in a separate building a few blocks away from the meeting places. This group consists of dozens of health exhibits of interest to the public. There will be no admission charge. It will be widely publicized in and around Peoria.

The preliminary program for the 1940 annual meeting will be published in the April ILLINOIS MEDICAL JOURNAL. The official program will appear the following month. This means that the officers of sections who are responsible for the development of the various programs must get their speakers as early as possible.

DISTRICT COURT IN TEXAS RULES STATE MAY REQUIRE CITIZEN- SHIP IN LICENSURE OF PHYSICIANS

Citizenship may lawfully be required by the state of Texas of an applicant for a license to practice medicine, as a condition precedent to the issue of a license, in the opinion of the district court of Travis County, Texas, in a case brought by a citizen of Mexico.¹ Such a require-

ment was held not to deprive an alien of any right guaranteed him by the Federal constitution. As far as available records show, this is the first time that a court has been called on to pass directly on this question. Under the provisions of the constitution a state cannot deny to an alien the right to follow a "common occupation" under the same conditions that it imposes on citizens. The practice of medicine, the Texas court observed, is not "a common occupation" but is a profession impressed in many instances with semiofficial duties.

Physicians have duties in connection with many important matters relating to the public welfare: duties in connection with governmental birth, sickness and death records; with the execution of certificates of inability of witnesses, or even of the defendant, to attend trial; with matters relating to communicable diseases and quarantine; with the execution of certificates of freedom from disease, required by law in connection with the issuance of marriage licenses, and with the enforcement of state and federal narcotic laws, and many other duties of similar nature. All these duties are imposed on physicians by the government in the furtherance of policies adopted by the state for the welfare of the people as a whole. A physician who is a citizen will be better able to cooperate with the state in carrying out its policies than a physician of foreign allegiance and training who is unfamiliar with the ideals and institutions of our country.

In epidemics, the court pointed out, the closest cooperation is required between the medical profession and various governmental agencies. The virtual end of epidemics of many diseases, such as cholera and smallpox, has resulted from the close partnership that has been maintained between the practicing physicians and administrative agencies of the state and federal governments. For the preservation of gains that have been made and in the furtherance of similar objectives, the court thought that the legislature had a perfect right to declare it to be of utmost importance that the practice of medicine be limited to citizens. Again, in time of war the services of physicians constitute a necessary and most important link in our fighting forces; the court thought that physicians who have not signified a belief in the fundamental ideals of this country would be in a position to exert a subversive influence tending to undermine and destroy those

ideals and to thwart the attainment of the objectives for which we might be fighting. For these and other reasons the court felt that it was within the police power of the state to deny to aliens the right to practice medicine to the end that public health, safety and morals might be furthered and preserved.

The court, incidentally, expressed great difficulty in understanding why Texas had ever permitted examinations for medical licensure to be conducted in any language other than English, believing a thorough knowledge of our language to be of prime importance to a physician if he is fully to understand the information imparted by a patient and if he is adequately to give instructions to that patient. *J. A. M. A.*, Oct. 14, 1939.

CITIZENSHIP AS A CONDITION PRECEDENT TO MEDICAL LICENSURE IN THE UNITED STATES¹

Numerous alien physicians, and particularly physicians from Germany and the nations it has taken over, have been coming into the United States during recent years for permanent residence. In some states difficult situations have been created. During the eight Federal fiscal years immediately preceding June 30, 1938, 3,165 immigrant physicians arrived, of whom 1,221 came from Germany and Austria². During the following fiscal year, which ended June 30 last, immigrant physicians numbered 1,384, of whom 819 came from Germany, which during that year included the area formerly known as Austria. During the fiscal year 1931 immigrant physicians numbered 329, while during the fiscal year 1939, just ended, they numbered 1,384.

How and where these 4,549 alien physicians are now located, what they are doing and what their prospects are of establishing themselves in the practice of their profession, if they have not already done so, is not known. Those who have not yet become United States citizens or even taken out first papers are confronted by statutes

1. The data in the table and accompanying it, so far as they relate to statutory requirements, have been compiled by the Bureau of Legal Medicine and Legislation from the statutes of the several states. The data relating to regulations promulgated by state boards of medical examiners have been compiled from information supplied the Council on Medical Education and Hospitals of the American Medical Association by the boards of medical examiners of the several states.

2. Immigration of Alien Immigrant Physicians, *J. A. M. A.* 112: 737 (Feb. 25), 1939.

STATUTES AND REGULATIONS GOVERNING LICENSE TO PRACTICE

Citizenship Required		First Papers Required		Neither Citizenship, nor First Papers Required
By Statute	By Regulation of Medical Examining Board	By Statute	By Regulation of Medical Examining Board	
Arkansas Delaware ¹ Florida Georgia ² Idaho Louisiana ³ Nebraska New Hampshire ⁴ New Jersey South Dakota Texas Wyoming	Alabama ¹ Iowa ⁵ Kansas Kentucky Michigan Minnesota ⁶ Missouri Montana Nevada North Carolina Oklahoma South Carolina Tennessee Washington West Virginia	Connecticut Illinois ⁷ Massachusetts ⁸ New Mexico New York ⁹ Pennsylvania Rhode Island ¹⁰ Wisconsin ¹¹	Colorado ¹² Maine Maryland ¹² Mississippi North Dakota Ohio Oregon Utah Virginia	Arizona California District of Columbia Indiana Vermont

and regulations which, except in four states and the District of Columbia, will bar them from licenses to practice. The various statutes and regulations in force governing the matter are herein briefly summarized.—J. A. M. A., Oct. 14, 1939.

1. In Alabama and Delaware, citizenship is required of graduates of foreign medical schools.

2. In Georgia, persons who had resided in the state for at least three months prior to March 23, 1939, who were graduates of a medical school approved by the Association of American Medical Colleges or the State Board of Medical Examiners of Georgia, who had practiced in a foreign state or country for at least twenty years and who had filed first citizenship papers may be issued temporary permits valid for six years. If at the end of that period full citizenship is not obtained, no further license may be issued.

3. In Louisiana, temporary permits may be issued to applicants who have taken out first naturalization papers. By board ruling, licentiate must obtain full citizenship within the time limit prescribed by the federal law on penalty of withdrawal of temporary permit.

4. In New Hampshire, citizenship is required of all applicants except citizens of "a Canadian province in which like privilege is granted to citizens of the United States."

5. In Iowa, citizenship is required of graduates of foreign medical schools, except Canadian schools.

6. In Minnesota, citizenship is required of all applicants except citizens of Canada.

7. In Illinois, the law provides that an applicant shall have obtained first citizenship papers "or having made such declaration of intention, has filed a petition for naturalization within thirty days after becoming eligible to do so."

8. In Massachusetts, licentiate must complete naturalization within five years or else the license is revoked.

9. In New York, licentiate must obtain full citizenship in ten years or else his license is revoked.

10. In Rhode Island, by board regulation, licentiate must obtain full citizenship within five years.

11. In Wisconsin, the law provides that an applicant who by reason of his nationality is intigible to citizenship, who was a graduate of a reputable professional college in the United States prior to June 22, 1933, and who possesses all other

WILBER E. POST—DEAN OF RUSH MEDICAL COLLEGE

Appointment of Dr. Wilber E. Post as Dean of Rush Graduate School of Medicine was announced November 1st, by President Robert M. Hutchins of the University of Chicago.

Dr. Post, a noted internist who is one of Chicago's leading physicians, has long been associated with Rush. A graduate of the University of Chicago, he received his M. D. from Rush in 1903, and has been a member of the faculty since 1905. He has been clinical professor of medicine for the past 20 years, and is the president of the staff of Presbyterian Hospital, which is one of the teaching hospitals of Rush.

Dr. Post has been a member of the Board of Trustees of the University of Chicago since 1919, but under the practice of the Board his acceptance of the administrative position required his resignation as trustee.

In conformity with a policy announced as early as 1916, but never put into effect, the University recently announced that undergraduate medical education (which leads to the M. D. degree) would be discontinued at Rush after 1942. As the Rush Graduate School of Medicine, the school will emphasize research and post graduate training in the various fields of specialization. This graduate work will begin as soon as plans can be fully formulated under the leadership of Dr. Post.

qualifications to secure a license, and at least one of whose parents is a native of Wisconsin, shall be licensed.

12. In Colorado and Maryland, first citizenship papers are required of graduates of foreign medical schools.

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
J. R. Neal, M. D.
Ralph Peairs, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

Address all letters and communications to the Chairman.

R. K. Packard, M. D.
C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

In the midst of all the discussion and argument anent State Medicine, the eight point platform announced by the American Medical Association in the press of November 18, is most timely and assuring. One of the criticisms of Organized Medicine heard most frequently is the lack of any definite plan or outline in regard to the care of the low income group. Those of us who are moderately well informed know that there are many different plans for the care of the low income group in use in different parts of the United States at this time, some of them have been very successful, even though a similar plan is not successful in another community. The Trustees of the A. M. A. have answered some of their critics by the outline recently announced and since it is the adoption of a new policy, we believe that it is worth while to reprint the eight point outline, even though we know that the majority of the medical profession of the state have at least seen the same even though they have been too busy to have read it carefully. Having it a Journal makes it semipermanent and gives an opportunity to read it at leisure.

As printed in the *Chicago Tribune* on November 18, 1939, it read as follows:

1. The establishment of an agency to coordinate and administer all medical and health functions of the federal government exclusive of the Army and Navy.

2. Allotment of such funds as congress may make available to any state in actual need.

3. Adoption of the principle that public health and medical service to the sick is primarily a local responsibility.

4. Development of the mechanism for expanding preventive medical service with local determination of needs and control of administration.

5. Extension of medical care to the indigent, with local determination of needs and control of administration.

6. Utmost utilization of already established

medical and hospital facilities in any extension of medical services to the people.

7. Continued development of the private practice of medicine subject to such changes as may be necessary to maintain the quality of such services and to increase their availability.

8. Expansion of public health and medical services consistent with the American system of democracy.

The outstanding features of the above is the contention that care of the indigent should be a local rather than a national responsibility and also that the private practice of medicine should be continued. A recent article in the *United States News* as follows: "Inner Circle planning for new lend-lease program is under way."

To be urged on the President are: 1. A new public works program, 2. More liberal old age pension plan, 3. Aggressive support for a national health plan, 4. Continued WPA, 5. A government supported private to make investments in small business.

It has been suggested by a group in Washington that the A. M. A. should outline a Bill to be substituted for the so-called Health Bill (S. 1620), but the officers of the A. M. A. have continued to refuse any such action. However the outlining of the above platform is a move to meet the demand above stated and may be the opening wedge of a new policy in the organization. With the Federal Security Administrator, Paul V. McNutt apparently in charge of the national Health Program and the nearing of a national election, in which he is quite interested, we can expect great activity on that front and with the bills of Wagner and Capper left over from the last Congress plus another bill promised by Senator Taft, who also is greatly interested in the coming election, the medical profession can expect real activity soon after the 20th of January, 1940. We still have about two months to contact our Senators and Representatives while they are home celebrating the holidays, repairing their political fences and finding

out how the people back home really feel about things. The fact that they paid no attention to the public in the recent session on Neutrality, does not mean that they are all back under control. There still is educational work to be done among them by the medical profession. But when they are approached by a member of the medical profession, said member must be prepared with definite facts and information, so that he can answer the questions he will be asked.

The California Plan for state-wide voluntary health insurance apparently has begun to have difficulties. The physicians of Sacramento County having refused to cooperate under the plan, advancing the reason that they did not believe in the workability of the plan. This failure on the part of the physicians of Sacramento County to cooperate under the plan will, of course, cause great technical difficulty in the furnishing of service to the 4,600 residents of said county who are subscribers to the plan. As yet, no definite plan on the part of California Physicians Service to meet this problem has been announced. Without going into the cause of the rejection of this plan by the physicians of Sacramento County or to repeat the importance of all physicians working together now as no other time, one must wonder whether the plan was adequately sold to the medical profession or whether it was passed too rapidly and in a manner of speaking crammed down the throats of some of the profession who either were not sold on the proposition or withheld their criticism until the entire plan was unfolded at which time they made up their minds that the proposed plan would not work and accordingly refused to cooperate. Again, it must be emphasized that there is much educational work to be done within the profession and that the members are individuals unaccustomed to be dictated to. Possibly a little more time to explain the plan to the rank and file of the profession, who after all are the ones who will render the service, rather than the small group of leaders, who often are specialists and become so enthusiastic over their brain child, that they lose the perspective of the general practitioners, and insist on the acceptance of their judgment. Often a little patience will bring over the more obstinate objectors to the plan, whom we must admit may be right.

The *Kansas City Medical Journal*, edited by

E. H. Skinner M. D. has a most excellent editorial in the November issue under the heading "Stick to your Guns." We suggest that all of you to whom this article is available read the same. We are making an effort to obtain permission to print the same in the January issue of our Journal.

A preliminary report has been made by the Sub-Committee of the Medical Economics Committee on the subject of Voluntary Health Insurance Plans. This subject was assigned to the Committee on Medical Economics in accordance with a resolution presented at the last meeting of the house of delegates at Rockford, with instructions to study and present a report with recommendation for a plan for Illinois at the 1940 meeting in Peoria. The Committee has done a large amount of work and still are very active.

The subcommittee will report to the entire Committee at the January meeting of the Council. At that time a beginning will be made in outlining a plan and the report to be presented to the House of Delegates in May. Please read this report and if you have any comments or recommendations to make, write to W. M. Hartmen, M. D., at Macomb, Illinois.

E. S. Hamilton, M. D., Chairman.

REPORT OF SUBCOMMITTEE

E. S. Hamilton, M. D.,

Chairman Committee on Medical Economics,
Kankakee, Illinois.

The report of your Sub-Committee appointed to study Voluntary Sickness Insurance Plans follows:

Acting on the suggestion of the Council, that an effort be made to determine if possible what the members of the medical profession of Illinois thought about Sickness Insurance, a short questionnaire was prepared and sent to the secretaries of all County Medical Societies. It was thought that a simple short form with a few questions and a space for discussion and suggestions would be most practical.

To date replies have been received from 1/3 of all sent out. The replies have not, as yet, been tabulated and finally analyzed. Some interesting things are appearing however.

The acknowledgments have come for the most part, not from the larger centers and better or-

ganized societies, but from the smaller, more remote counties.

One man writes: "In a county such as ours, made up mostly of agricultural people, we hear very little about such things." I believe that answer in itself reveals the need for educating our members in matters economic and I further believe that one of the greatest benefits from the questionnaire will be its educational value.

So far all prefer Voluntary Sickness Insurance except one secretary who "personally prefers Compulsory Health Insurance because poor people will not do so voluntarily. However, I believe it impractical and unenforceable and therefore think that Voluntary will be best."

There is recurring reference to the indigent group and the need for more attention to the problems of their medical care.

I believe this questionnaire shows to date that physicians and public need to be better informed on the subject of Sickness Insurance. I believe that the questionnaire in itself has educational value in stimulating interest along this line, and it also shows that in our zeal for the study of new problems we must not overlook the problem of the indigent, which continues in an acute state in many communities.

MEDICAL SERVICE BUREAUS

In 1937 this Committee made a study of Credit and Credit Rating and Collection Bureaus in Illinois, and it was found that there were in operation at that time in the State three Medical Service Bureaus. Many County Medical Societies maintained Credit Rating Departments where "dead beats" were listed, and some also added Collection Departments to their activities.

Medical Service Bureaus gradually developed throughout the States during the depression out of the need of persons in low income groups for assistance in meeting their needs for Medical Services. These organizations were developed in County Medical Societies by alert physicians who saw that patients in the group needed assistance and advice in budgeting medical bills, and that physicians, also, needed help in judging a patient's ability to pay.

However, all of these plans were post payments plans. They made it possible for a patient to make arrangements for the payment of Medical, Dental and Hospital expenses on a deserving

basis of what they could afford to pay. They were important and helpful agencies in the communities where they served.

They prevented pauperization of those who could not pay medical fees in full but who could make partial payments.

About the same time schemes or plans for prepayment of medical service on a monthly or annual basis began to be the subject of discussion and it is most interesting to note that the medical profession in the consideration of this phase of furnishing medical services has experimented with more plans than the most severe critics of the profession have ever dreamed of.

The first successful operation of Medical Service Bureaus by County Medical Societies began in the states of Oregon and Washington about eight years ago. This condition of affairs came about as the result of a provision in the Workman's Compensation laws in those States, which permits a deduction from employees' wages to provide medical attention for compensable injuries and disease.

This provision of the law brought into existence private corporations and hospital associations, who contracted with employees and employers to provide the required legal medical attention and who then in turn employed physicians, hospitals, nurses, druggists and dentists to furnish such attentions. These corporations then went a step further and added non-compensable injuries and diseases to their scheduled medical services all to be paid for on contract by pay roll deductions.

Evils and abuses arose under this system which became so great that medical societies were forced to develop their own organization, the Medical Service Bureau, in order to overcome and correct these difficulties.

One of the most successful and outstanding of these Western Medical Service Bureaus is Washington State Medical Service Bureau. This organization is an activity of the Washington State Medical Society serving as its business arm. It operates by organizing County Medical Service Bureaus sponsored by the State Medical Society supervised by the County Medical Society under full time lay management. A special committee of physicians acts as a Board of Control, auditing bills, settling disputes, taking care of "chiselers", etc., etc.

All local control is by the counties. All offices,

State and local, are physicians. There are no lay members except manager employees. They have the power to make contracts for medical services with large and small companies, usually union controlled, for employees medical services. Individual members are not taken.

The services these Bureaus offer to the profession differ in different counties but for the most part are as follows:

1. Private collection agency for doctors.
2. Twenty-four hour telephone service.
3. A Credit Rating Service.
4. Provide a Medical Library.
5. Provide funds for political purposes.
6. An instrument for peace making among physicians and members.
7. Securing contracts for medical services for members.

Each corporation is a non-profit corporation. Its membership is composed of a group of voluntary members of the local County Medical Society. The membership in some of the counties is high in the nineties.

Sometimes the receipts fell behind the bills presented and some physicians' bills could not be paid at all. It then became necessary to change the plan for paying physicians' bills to one where the bills could be prorated. Such a plan of payment is known as the Unit System of Payment. All these Bureaus in Washington now operate under the unit method of payment.

These organizations have been very successful in their operations in the State of Washington and now have a valuable background of eight years of experience in this field. They have managed to keep control in the hands of the Medical Profession and activities on the receiving end.

W. M. HARTMAN, M. D.

Chairman Sub-Committee on Medical Economics.

Correspondence

CONTRIBUTIONS OF THE CHICAGO MEDICAL SOCIETY TO THE PUBLIC WELFARE

Dr. Saunders: Dr. Maple, I know that during the two years you served as Secretary of the Chicago Medical Society many items must have come to your attention of which you could advise me, and at the same time give our listeners

a general idea of some of the activities of the Chicago Medical Society.

Dr. Maple: Yes, our organization is a very active one, and the greater part of its activities are directed toward the goal of better health and hygienic conditions for the citizens of our community.

Dr. Saunders: The Chicago Medical Society being the Medical Society of Cook County, is therefore a component part of the Illinois State Medical Society and in that way contributes to the activities of the Illinois State Medical Society, so that when we speak of the activities of either society we understand that they are the combined activities sponsored by both organizations. The Illinois State Medical Society through its Educational Committee maintains an office and a full time Secretary here in Chicago. Will you tell us of some of their activities?

Dr. Maple: During the last ten years this committee has furnished literally thousands of speakers for public meetings such as Parent-Teacher Associations, Service Clubs, Women's Clubs, Teachers' Institutes, Schools and Colleges, on interesting and timely health topics. Through the generosity of the broadcasting systems, this committee has been able to supply regular radio programs devoted to public and personal health problems. They furnish a health column for Illinois newspapers and loan package libraries of material on health subjects. The public libraries of our State obtain much of their material pertaining to health items from this committee.

Dr. Saunders: Then any organization in the State wishing to hear an address on some health subject could obtain a speaker from this bureau?

Dr. Maple: Yes, they are glad to furnish speakers well informed on the problem confronting the particular organization requesting the speaker, and all the group needs to do is to communicate with the committee, telling them of the subject they wish to have discussed and the committee will suggest a speaker especially well equipped to talk on that particular topic.

Dr. Saunders: The Maternal Welfare Committee has been very active for several years studying methods to reduce maternal and infant mortality. I know our audience is vitally interested in your report of progress in this direction.

Dr. Maple: One of the outstanding problems in medicine today is the improvement of ob-

stetrics. A nation wide movement in this direction resulted in the recent obstetrical congress held in Cleveland, where almost 3,000 physicians met to discuss the various plans. Already in effect in Chicago is a plan which covers all hospital cases, all physicians doing work in the hospitals and the hospitals themselves.

The hospitals are now co-operating in the best available obstetrical care, physicians are asking consultations before every obstetrical procedure of any serious consequence, and the routine is under regular and complete supervision of the Board of Health.

A very harmonious procedure has been worked out, practical ideas which would prevent infections in women, provide for the obstetrical emergencies when they arise and gives the new born baby every advantage offered by the modern hospital of today.

The result after working under this plan has been most happy. Chicago today enjoys the lowest death rate for mothers of any city in the United States and a rate as good as any nation in the world. The rate for new born babies is as low or lower than any other large city or nation in the world.

A continuation of this fine record is guaranteed by a permanent committee which meets regularly and is very alert to any new development which might even better the present situation.

Dr. Saunders: While you catch your breath, let me remind our listeners of the work of our Advisory Committee to the Chicago Relief Commission. The medical care of these unfortunate relief clients is a colossal task. We feel that through the cooperation of the Chicago Relief Commission and the Advisory Committee appointed by the Chicago Medical Society, that the relief clients of our city get the best medical care furnished such clients by any large city in the nation. Through this same cooperation abuse and extravagance have also been avoided. Under the program as worked out here a relief client who becomes ill may notify his district relief office of the need of medical attention. If he has a family physician he will be called, if he has no physician he may choose one from a panel of local physicians who have agreed to take such calls. Whichever physician is called, makes the visit, renders care, writes orders for drugs and medical supplies which are purchased at a local

pharmacy, and paid for by the relief commission. If hospitalization is required it is arranged for. Obstetrical cases get very careful prenatal and post-partum care, and all physicians who care for relief clients attempt to give them the same high grade service they render their regular patients. This Advisory Committee of busy physicians have given up their time to hold a three hour meeting with representatives of the Relief Commission every two weeks, winter and summer for the last five years. At these meetings they review the work being done by over 2,500 Chicago physicians rendering service to relief clients to assure themselves that the service rendered is of the highest type obtainable, and that the funds of the taxpayers are conserved.

Dr. Maple: There are many other committees of our society which render services of inestimable value to the welfare of our community. Our Committee on Public Health Administration in coordinating the activities of the medical profession and our local health department has waged an unending battle against the contagious diseases by constantly urging parents and physicians to take advantage of all newly developed prophylactic measures such as vaccination against smallpox, inoculations against typhoid fever, diphtheria, scarlet fever and whooping cough. In conjunction with our Venereal Disease Commission they have done much to fight the menace of venereal diseases in Chicago. They have given post-graduate courses and demonstrations for physicians in the detection and treatment of these conditions, and have cooperated with our Health Department and public health officials in their campaign to wipe out this public menace.

Dr. Saunders: Through our Scientific Service Committee and the Educational Committee short post-graduate courses are arranged for physicians all over the State, so that by constant education and stimulation of physicians throughout the State those physicians render strictly modern service, giving the citizens of our city and State advantage of all new medical discoveries and practices. In this way our Society brings post-graduate study right to the door of the busy physician who cannot always arrange for relief from his work long enough to go away to some distant school to take a post-graduate course. The patients of physicians who attend these

meetings reap the benefit from the new things he learns. There is nothing about our profession which touches me as much as the fact that we never attend a medical meeting without seeing numbers of physicians with aged brows and snow white hair listening carefully to pick up some new idea, or hear of some new discovery which they may take home with them to relieve the suffering or save the life of some patient under their care.

Dr. Maple: That's very true, and we must not forget the many things people learn from our scientific exhibits, and our displays in the Hall of Health arranged at all of our State conventions. These exhibits attract thousands of people who go away much better informed on many health subjects. These exhibits are made up of posters, models, charts, movies and diagrams informing the public of ways of combating many enemies of health such as automobile accidents, accidents of children at play, contagious diseases, tuberculosis, cancer, pneumonia, heart diseases, electrical shock, burns, asphyxiation by gas or carbon monoxide.

Dr. Saunders: Through our Legislative Committee hours, days and weeks of time is spent in protecting the citizens of our State from the enactment of various laws which would be detrimental to the public health. Many attempts have been made to lower the educational requirements for persons licensed to treat the sick. All of these attempts have been opposed by our Society.

Dr. Maple: The Students Advisory Committee meets regularly with students in Chicago's great medical schools and renders them advice and assistance in their educational problems. The Hospital and Clinic Committee helps maintain a high standard of service in hospitals and clinics in Chicago and augments the teaching facilities in these institutions for internes, students and post-graduate students. Many public meetings are held each year, both by our Society and its Woman's Auxiliary, with educational programs and speakers of national reputation stimulating the interest of the public in health matters. Our Cancer Committee in conjunction with the Woman's Field Army on Cancer Control maintains a constant attack on the cancer menace.

Dr. Saunders: To summarize then, there is

nothing the Chicago Medical Society and Illinois State Medical Society leaves undone which might be done by their members to improve the education of their profession, and for the protection of the health of our community. We are constantly on the alert, and forever striving to maintain the highest possible standards of education of those engaged in the healing arts. We are constantly striving to keep our citizenship alert to the dangers of the enemies of health, and to keep both physicians and the public educated as to the most efficient ways of combating those enemies.

Dr. Maple: As President-elect of our Society I can assure you our efforts to protect the public health will be continued and augmented.

Frank Maple, M. D.

H. Prather Saunders, M. D.

LAITY APPRECIATES EDUCATIONAL COMMITTEE ACTIVITIES

Comments from laity regarding health educational material sent by Educational Committee of Illinois State Medical Society:

High School—"Please place my name on your mailing list for any material of interest to high school girls."

Health Education Teacher, High School—"Please send the weekly articles for study in health educational classes."

Principal High School—"Please place me on your mailing list for your 'Weekly News Release.'"

Nurse—"I would like very much to receive the articles published by your society for editorial comment or publication. I am a registered nurse and an assistant instructor at Hospital School of Nursing; and having read some of your articles, I find them very interesting and useful."

Supt. County Adult Education—"Your excellent materials on health have come to our attention through our Home Bureau office. We feel that they would be very valuable for use in our Adult Education Classes in this county, notably Parent Education, Naturalization and Adult Elementary Classes. May we ask to be placed on your mailing list?"

Health Chairman, P. T. A.—"Kindly put me

on your mailing list that I may receive your radio talks, also your health articles. As Health Chairman of the High School P. T. A. I hope to benefit by this information."

Club Woman—"Have been reciving your literature for the past three weeks and want to express my appreciation for same."

Teacher—"I am receiving the articles you send out on health and find them useful in teaching my W. P. A. classes in Parent Education. Thank you and please continue sending them."

Chicago Teachers College, Dept. of Physical Education—"I have just this morning received a copy of the radio program listed in your 'Timely Health Topics', and wish to thank you. Please be sure to keep my name on your mailing list for similar announcements as I find them most valuable in teaching my course in Health Education. If it would be possible for you to send me fifteen additional copies of this bulletin, for teacher use, I would appreciate receiving them."

Director, Department of Physical Education for Men, Indiana University—"I would appreciate it very much if you would place my name on your new mailing list, so that I can receive the articles from your educational committee. I have been placing these materials on display in our health and safety workshop, and have heard favorable comment upon them. I have also referred to these materials from time to time in both my graduate and undergraduate classes. I think these materials represent a type of work which is becoming of more and more prominence and which will undoubtedly do much good."

School Nurse—"I find that your publications are very interesting and educational and I am keeping them for binding. I think that the teachers in our schools here in Harrisburg would also be interested in receiving these bulletins. I do not know what your policy is in regard to sending out these publications, but I am enclosing a school directory and if you could put all or part of them on the mailing list, it will be greatly appreciated."

"If you do not find it possible to put all on the mailing list, perhaps you can arrange to place our principals on."

"Thank you for your courtesy in sending me your material."

THE WAGNER ACT SHOULD BE DEFEATED

Chicago, Ill., Nov. 3, 1939

To the Editor: Testimony given before the Senate Committee during the hearing on the Wagner Act shows that the Act is too defective to receive the approval of the medical profession. The Act as conceived at present will not improve the distribution of medical service and will operate in the end to the disadvantage of the public and the profession. As the Act stands it appears to be so defective that it cannot be rendered satisfactory by amendments.

However, should the profession take an entirely negative stand regarding some of the aims of the Act? An entirely negative position holds either, 1, that nothing is wrong with the distribution of medical service in our country; or 2, that something is wrong but it cannot be remedied by Federal legislation. A positive and probably a constructive stand would be, 3, to write an Act that would improve the distribution of medical service and at the same time prevent (a) the pauperization of the patient, (b) the nullification of the patient-physician relationship and the right of a patient to choose his physician, (c) interference with private initiative, and (d) the introduction of politics into medical service.

Proposition 1, namely, that nothing is wrong with the existing distribution of medical service is a proposition difficult to defend satisfactorily. The choice lies between proposition 2 and 3. Proposition 2, namely, that something is wrong and it cannot be remedied by legislation but only by an improvement in the general economic condition of the public, is defensible and easily defended. In addition, it may be true. That is it may be impossible to write and operate any legislation which would meet the demands of proposition 3. How to keep out politics and how to insure the patient-physician relationship which is of great practical importance in the maintenance of the best medical service are real and very important questions. So it may be true that proposition 2 is correct and proposition 3 is only a hope. However, the defenders of proposition 3 can say to the defenders of proposition 2 that an Act following the ideas of proposition 3 should be tried, and if it cannot be administered, then let us repeal it.

The Wagner Act should be defeated if for no other reason than because the advice of the medi-

cal profession was not sought when it was written, but was ignored, and because this means its failure regardless of any good points it may possess. To make a medical service act work it must have the support of the majority of the profession. Those persons who believe that the distribution of medical service can be improved should ask the profession how such can be best accomplished. Instead the proponents of the Wagner Act have broken into a china shop and have caused a great deal of damage. The medical profession cannot be forced. It can be persuaded by facts and is willing to conduct experiments, if there is no possibility of the experiment creating more harm than good. And no group is better able to determine the prognosis of an experiment in medical practice than the physicians themselves. Since the profession is involved, it should decide what it is going to do. If the profession adopts propositions 1 or 2, it subjects itself to the criticism of adopting an obstructionist attitude. To avoid this criticism and to attack directly the problem of the distribution of medical service in a satisfactory way, the profession must provide a plan. Such a plan if adopted should not be an all inclusive one. It should involve preferably only one or two advantages to be accomplished. To propose and to adopt such a plan would not necessarily amount to the acknowledgment of defeat to those who believe that medical practice should be immediately and for all time socialized. To adopt such a plan might be the opening wedge for the on-rush of socialized medicine, and this cannot be minimized. Whether it would constitute an opening wedge would depend entirely on the stalwartness and solidarity of the profession or its ability to prevent the enactment of "half-baked" or ill-advised additions to the primary act. The primary act may work so well or so poorly as to stop any attempt toward socialization of medical practice. And, any act to improve the distribution of medical service, if properly safeguarded and administered, does not necessarily mean socialization. If socialization is going to occur, will it not be better for the public and the profession if the socialization process is directed and supervised by the profession?

The foregoing statement represents an attempt to analyze the issues surrounding the Wagner Act and are not intended to state the individual opinion of the author.

Summary: The Wagner Act should be defeated. But while the defeat of the Wagner Act is being sought the profession should prepare and be prepared to answer the following questions: 1. Is the distribution of medical practice in the United States all that it should be? 2. If not, can it be remedied by Federal legislation? 3. If it can be, is it possible for the profession to write an Act that would operate advantageously to public welfare? 4. If possible, should the objective be general and all inclusive or should it be very specific in nature?

G. B. Fauley, M. D.

THE FAMILY DOCTOR

Mt. Vernon, Ill., Nov. 14, 1939

To the Editor: Fifteen years is a brief period of time when compared to the age of civilization. To me fifteen years of well guided influence has taught the necessity and advantage of the family doctor.

My parents chose our family physician because of many things they liked about him. He was a man of character, ability, pleasant personality, showed enthusiasm for his work and had a sincere desire to keep learning the latest medical developments. They felt that his decisions could be trusted in many ways other than in the practice of medicine. He was considered a part of the family in sickness, mental troubles and sometimes domestic problems.

This family doctor guides my family by advising the proper time for prevention against contagious diseases, by giving serums and vaccines. He considers it a part of his duty to inform us when infectious diseases are present in our community and to tell us what to do to prevent them. We keep in regular touch with him, therefore it is easy for him to advise us.

The family doctor must live just as any other individual, so let us be careful to not abuse our credit standing with him. If credit is well established one will be able to get medical help when and where needed. It will create confidence and trust which count much in further consideration.

Serving the sick and injured with their hearts, souls and bodies is a religion, in the broadest sense, to most doctors. This is proven by the uncountable cases of treating the needy and helpless for which the doctors never hope to be paid. They see the need for medical attention and their first impulse is to help.

Faith in a doctor counts greatly in cases of severe illness. If one establishes a personal relationship with a doctor he learns to have confidence in his decision. It is easier to face an operation if one trusts the ability and sincerity of the physician. It is most consoling in severe illness to know the family doctor is doing everything he can and is eager to call in other doctors for decisions when in doubt.

Public clinics are a great help for many people who are unable to secure the service of specialists, but one cannot expect to receive the sympathetic and kind attention that a family doctor gives. It is to be remembered that few medical cases are so complicated that a family doctor cannot find the cause of illness. His advantages are many because of his intimate knowledge of the patient and by observation over a long period, while the clinic's specialists can only analyze the present conditions.

The United States today is the healthiest nation in the world. The lowest death rate as well as the lowest sickness rate is to be found in this country. Why? Because typical American families put their health in the hands of the most honorable of all professional people, the Family Doctors.

Miss Evelyn Parker, age 14.
Bluford High School.
Bluford, Illinois

Note: Miss Parker was prize winner in an essay contest among high school students. Jefferson-Hamilton County Medical Society sponsored the contest. The subject assigned was "The Family Doctor." More than 300 essays were turned in.

SOUTHERN ILLINOIS MEDICAL SOCIETY

To the Editor:

The Southern Illinois Medical Society met in Mt. Vernon last week. We had one of the best scientific programs in the history of the society. The Jefferson-Hamilton County Medical Society sponsored an essay contest among the high school students of this county—the subject was "The Family Doctor." To stimulate the interest in this essay contest, we gave three prizes. The first prize was \$15, second prize \$10, and the third prize \$5. More than three hundred essays were turned in. The first prize was won by Evelyn Parker, age fifteen, of the Bluford high school. I am enclosing this essay with the

request that if you can possibly find space, we will appreciate you publishing it. If not, please return it to me.

Dr. John S. Coulter, of Chicago, appeared on our program and made a very interesting talk on Physical Therapy and Chronic Arthritis. Dr. Coulter reviews the current literature on Physical Therapy and furnishes some columns to various medical journals. The Physical Therapy committee of the state society is so scattered over the state that it is not convenient for us to meet from time to time but I feel quite sure that he would be glad to furnish some material for the journal occasionally. Dr. Coulter has agreed to help us out in this matter but would like to know how much space you could give him.

Fraternally,

Andy Hall, M. D.

NATIONAL PHYSICIANS' COMMITTEE

Chicago, Ill., Nov. 2, 1939.

To the Editor:

The National Physicians' Committee for the Extension of Medical Service has been organized with offices at 700 North Michigan Avenue, Chicago. Its Executive Board is composed of Edward H. Cary, President, Dallas; A. A. Hayden, Secretary, Chicago; N. S. Davis, III, Treasurer, Chicago; Irvin Abell, Louisville; F. F. Borzell, Philadelphia; W. F. Braasch, Rochester; John A. Hartwell, New York; Roger I. Lee, Boston; Alphonse McMahon, St. Louis; E. H. Skinner, Kansas City; C. B. Wright, Minneapolis. Over two hundred physicians have joined its Central Committee.

The reasons for this Committee are to create a non-political, non-profit organization to maintain ethical and scientific standards in extending medical service to all the people and, in cooperation with and the support of the medical and allied professions and lay institutions and groups, to make more generally known the achievements and to safeguard the independence of American Medicine.

With professional support to show just where we stand with respect to the social and economic problems before us, extensive public support can be obtained for this Committee that could not be accepted by existing medical organizations. The first appeal to some members of the profession on a nation wide basis has brought a most enthusiastic response. We are sure that

this Committee whose literature is or will shortly be in your hands, will have the enthusiastic backing of the medical profession of the State of Illinois.

WOMAN'S AUXILIARY HYGEIA REMINDER

"Keep Illinois Ahead" by subscribing to Hygeia, an official publication of the American Medical Association, is a project of the Woman's Auxiliary to the Illinois State Medical Society.

This is a magazine which conveys the most valuable health information, serves as a splendid guide for health problems and contains many more topics of vital interest.

Hygeia makes a very appropriate Xmas gift for all ages. Those who are interested in problems of health can not afford to be without it.

Prizes are awarded to State and County Auxiliaries for obtaining the greatest number of subscriptions. Send for yours now; the contest ends Jan. 31, 1940.

Mrs. W. J. Wanninger,
State Hygeia Chairman.

OPENINGS FOR PHYSICIANS

The Sixth Corps Area, comprising the states of Illinois, Michigan and Wisconsin, has openings for physicians in the Civilian Conservation Corps, it was announced today by Lieutenant General Stanley H. Ford, Commanding General of the Second Army and the Sixth Corps Area.

At the same time the General revealed that the War Department has provided for an increase of \$800 a year in the pay of civilian physicians employed in the CCC. This increase raises the yearly pay to \$3,200 as compared to \$2,400 formerly paid such physicians. The action was taken by the War Department to attract highly qualified physicians in order to assure the highest type of medical service for the CCC camps.

"The CCC Service," remarked General Ford, "offers an especially excellent opportunity for young physicians to secure experience that is both financially and professionally profitable. Many physicians accept this detail for periods of one or two years, during which they can save a moderate amount of capital on which to begin private practice.

"In making appointments, preference is given to officers of the Medical Reserve Corps of the Army, but many vacancies occur which are filled by physicians who do not hold Reserve commissions. Physicians desiring such appointments should communicate with the Surgeon, Sixth Corps Area, Room 1040, U. S. Post Office Building, Chicago."

MEETING OF INTERNATIONAL COLLEGE OF SURGEONS

The United States Chapter of the International College of Surgeons will hold its Fourth Annual Assembly, February 11-14, 1940, in Venice, Florida. There is no registration fee.

The convention will be under the direction of Dr.

Fred H. Albee, of New York City, International President-Elect, and Dr. Frederick M. Douglass, of Toledo, Ohio, President of the United States Chapter.

For general information please address Dr. Fred H. Albee, Chairman, 57 West 57th Street, New York City. For information about the presentation of scientific papers or exhibits, query Dr. Charles H. Arnold, Secretary of the Scientific Assembly, Terminal Building, Lincoln, Nebraska.

EXAMINATIONS AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The written examination and review of case histories (Part I) for Group B candidates will be held in the various cities of the United States and Canada on Saturday, January 6, 1940, at 2:00 P. M. Formal notice of the place of examination will be sent each candidate several weeks in advance of the examination date. No candidate will be admitted to examination whose examination fee has not been paid at the Secretary's Office. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held in June, 1940. Receipt of Group B applications for the current examination (January 6, 1940) closed October 4, 1939.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 8, 9, 10, and 11, 1940, immediately prior to the annual meeting of the American Medical Association in New York City.

Application for admission to Group A, Part II, examinations must be on file in the Secretary's Office not later than March 15, 1940.

After January 1, 1942, there will be only one classification of candidates, and all will be required to take the Part I and Part II examinations.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

A TRIUMPH FOR THE DOCTORS

The following appeared in the St. Louis Globe-Democrat, October 24th. This editorial is much appreciated by the medical profession, coming from a paper that enjoys a wide circulation and is read by most of the people of the area in which it serves:

"Federal control of the medical profession, a New Deal objective, was thrust far into the future by a United States Supreme Court decision in the case against the American Medical Association, three other medical groups and 21 physicians. It refused to review the action of Federal Judge Proctor, sitting in the United States District Court in the District of Columbia, sus-

taining demurrers to the indictment in which the defendants were charged with monopolistic control of the profession. He ruled that the practice of medicine is a profession and not a trade, and hence is not within the jurisdiction of the Sherman antitrust act. The highest court obviously entertains the same opinion.

"The case was highly important, because it involved an attempt by the administration to socialize the practice of medicine and bring it under government control. The action was brought by the Department of Justice in relation to Group Health, Inc., a co-operative health association in Washington, D. C. It was charged that the American Medical Association sought to destroy Group Health by threatening to expel all physicians affiliated with it; also, that pressure was exerted on hospitals in the national capital to induce them to refuse their services to Group physicians.

Incident to the court action considerable misinformation was spread about the motives that impelled the Medical Association to take its stand. The most senseless argument was that the doctors wish to operate as a clique which has no concern over the plight of persons in the lower income brackets. The thousands of hours of service which physicians the country over tender without thought of compensation, their co-operation in free clinics, their willingness to adjust fees to fit the pocket-books of persons with small incomes, their vigilance in matters regarding public health—all sufficiently answer the charge of callousness in the medical profession.

But many doctors are justly apprehensive over any attempt at socialization of their profession. They are fearful of federal encroachment on a domain where there should never be government domination with all its attendant political ills. Likewise, they believe that state control of medicine would destroy initiative and discourage research, both of which are essential if the profession is to make progress. We are sympathetic with this attitude, believing that the best interests of all will be satisfactorily served if the profession continues as it has in the past, imposing its own regulations on its members and contributing more than its share to the public weal. Expose the profession to politics, make it merely an unwieldy arm of the government and it will be wrecked.

CONTRARY TO THE SPIRIT AND INTENT OF THE MEDICAL PRACTICE ACT

To the Editor: November 29, 1939.

The following resolution was passed by the North Shore Branch of the Chicago Medical Society, at their monthly meeting on November 7, 1939:

Whereas, The diagnosis of any and all diseases of human beings is a part of the practice of medicine, and

Whereas, Such diagnosis is based on the sum total of all investigations made upon the person of the patient by the physician, and

Whereas, Every legally qualified physician is expressly granted the privilege of practicing medicine in all its branches; therefore, be it

RESOLVED, By the North Shore Branch of the Chicago Medical Society that the Director of Public Health of the State of Illinois is infringing on our several rights and privileges in refusing to accept our certificates of fitness in reference to the Marriage Law when the laboratory work is performed by ourselves, and be it further

RESOLVED, That the issuance of so called certificates of approval to any person or persons by the said Director of Public Health is in effect the issuance of a license to practice medicine, and such action has the effect of endowing such Director with an authority not especially granted to him and is considered contrary to the spirit and intent of the medical practice act of the State of Illinois and be it resolved that copies of this resolution be sent to the Director of Public Health that the same be published in the Illinois State Medical Journal.

R. B. Malcolm, Secy.-Treas.,
North Shore Branch, Chicago
Medical Society.

THE STRUGGLE FOR EXISTENCE

Infectious diseases are one of the great tragedies of living things—the struggle for existence between different forms of life. Man sees it from his own prejudiced point of view; but clams, oysters, insects, fish, flowers, tobacco, potatoes, tomatoes, fruit, shrubs and trees have their own varieties of smallpox, measles, cancer or tuberculosis. Incidentally, the ruthless war goes on, without quarter or armistice—a nationalism of species against species.—Hanz Zinsser, in "Rats, Lice and History."

Original Articles

THE USE OF PROGESTIN IN OBSTETRICAL COMPLICATIONS

FREDERICK H. FALLS, M.D.

Professor of Obstetrics and Gynecology, University of Illinois
College of Medicine, Chicago
CHICAGO

For the past fifteen years or more, in connection with my teaching program, I have defined pregnancy as a physiological internal glandular dystrophy. I have done this to impress upon the students the important part played by the glands of internal secretion in the process of reproduction. Recent research has supplied abundant proof of the correctness of this conception. Certain pathological states occurring during pregnancy can best be explained by the assumption of disfunction of some of the endocrine glands. Since it would take us too far afield to cover even sketchily the important relationship of all of these glands to the process of reproduction, I have chosen for discussion a single hormone (progestin). I will try to point out some of the facts regarding its action on the human uterus and how this knowledge may be applied clinically in the treatment of patients manifesting certain obstetrical abnormalities.

Progesterone is the hormone extracted from the corpus luteum. It has an inhibiting action on uterine contractions and it produces, when injected into suitable immature test animals (rabbits), a progestational change in the endometrium. We have recently established the fact that certain oily extracts have an inhibiting action on uterine contractions which have been previously stimulated by pituitrin. We have further shown that the water soluble substances in the early preparations of corpus luteum extract contain appreciable amounts of progesterone and can be used clinically in certain obstetrical complications. The object of this paper is to demonstrate the action of this hormone on the living human uterus in situ and to point out the clinical application of the knowledge thus obtained.

Figure 1, the method used was essentially that of Moir which consists of placing a rubber balloon in the uterus of a woman seven days post partum and recording the uterine contractions by means of a kymographic tracing. Pituitrin

was used to stimulate active uterine contractions. The promptness of action of the various progesterone-containing preparations is readily seen from a study of the tracings. When pituitrin is injected alone the uterus promptly responds by developing rhythmic uterine contractions which continue for at least an hour or two without change in rate or rhythm. If now pituitrin is injected in the same amount and is followed by an injection of one rabbit unit of progestin (oily extract), a prompt response in the form of inhibition of uterine contractions is noted. The aqueous solutions were less prompt in producing the inhibiting effect, but there is no reasonable doubt regarding their efficiency.

There is a group of obstetrical complications which seem to depend upon abnormal uterine contractibility. The stimulus for this abnormal irritability may come from various sources, but the end-result is the same in all cases—the emptying of the uterus unless the contractions can be controlled. Under certain circumstances it may be desirable to permit the uterus to expel its contents prematurely, as for example when it contains a dead fetus, a monstrosity, or an hydatid mole. Under most circumstances, however, the retention of the product of conception until full term is very desirable even when certain complications of pregnancy are present. At least the temporary inhibition of uterine contractions is imperative when the fetus is just on the borderline of viability. Our experience with the use of progestin preparations in such cases leads us to believe that they are extremely valuable even though the numbers treated thus far are not great enough to be entirely convincing.

In order to appreciate the fundamental factors which underlie the clinical phenomena apparent in some of these complicated cases, it is necessary to review the physiology of normal labor.

The mechanism of normal labor according to our conception is as follows:

The uterus, as all other hollow organs of the body under normal conditions, will try to expel anything that is put into its cavity. The natural tendency for every uterus during pregnancy is to get rid of its contents. The substance in the body especially elaborated to prevent this is progesterone. In the early months of pregnancy this substance is formed in the corpus luteum of the ovary, later it is manufactured by the pla-

centa. As pregnancy develops there occurs, due to stretching of the pelvic tissues, an irritation of the pelvic sympathetic ganglia. In response to this irritation, impulses reach the hypophysis which stimulate it to excrete into the blood physiological doses of pituitrin. These stimulate the uterine muscle to contract which irritates the cervix and the sympathetic ganglia and starts the cycle over again. In order to prevent this from occurring before completion of fetal development, nature has prepared an anti pituitrin in the form of progesterone. The action of this hormone on uterine contractions, both normal and pituitrin stimulated, is clearly seen in the tracings.

Figure 2, shows the effect of a one cc. injection of pituitrin stimulating uterine contrac-

which further injection of pituitrin causes no uterine contractions.

Figure 4, shows what happens when one cc. of pituitrin is injected initiating contractions

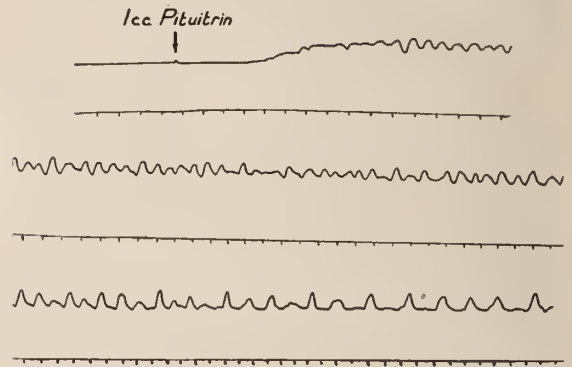


Fig. 2. Effect of 1cc. of pituitrin on uterine contractions uninfluenced by progesterone.

which were promptly stopped by progesterone, after which the uterus was refractory to stimulation by pituitrin.

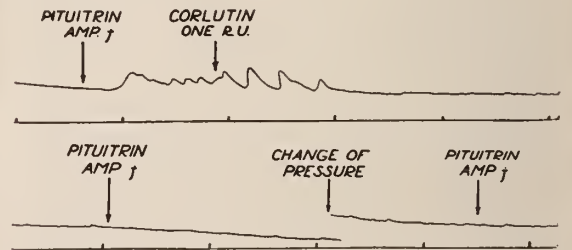


Fig. 3. The effect of progesterone on uterine contractions stimulated by the metreurynter bag.

Figure 5, shows that after a preliminary injection of progesterone the uterus fails to respond to bag or pituitrin stimulation even when sensitized by estrogenic hormones.

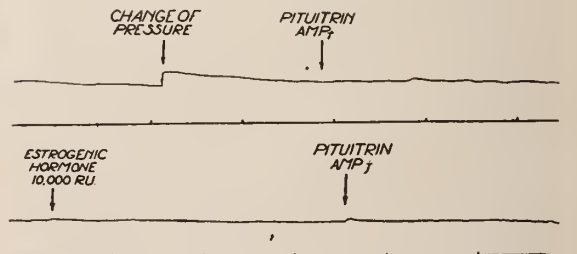


Fig. 4. The effect of progesterone on uterine contractions stimulated by pituitrin.

Figure 6, demonstrates that morphine, which is much used in the treatment of threatened abortion, not only does not cause sedation of

METHOD OF DEMONSTRATION

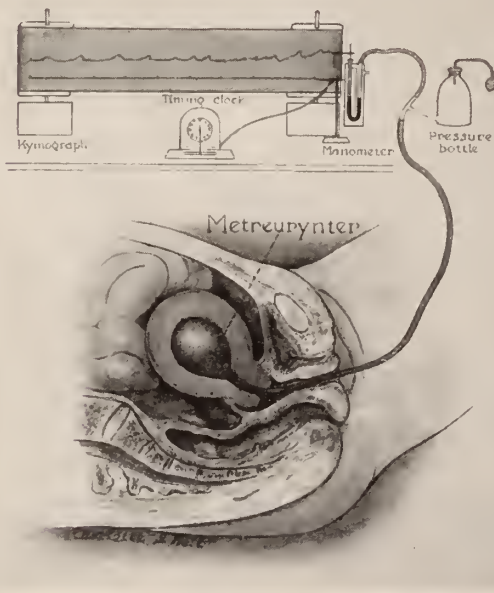


Fig. 1. Method of demonstration.

tions. The contractions start about four minutes after the pituitrin is injected, are tetanic at first, and are followed by regular rhythmical contractions which persist for two hours or longer.

Figure 3, shows that the presence of the inflated bag will produce uterine contractions and that these can be stopped by the injection of one rabbit unit of a progesterone preparation, after

uterine contractions but actually seems to stimulate them.

Figure 7, shows that the estrogenic hormone seems to sensitize the uterus so that the presence of the inflated bag leads to uterine contractions.

Because of the expense of the oily extract of the corpus luteum its continued use in women with threatened and habitual abortion is often prohibitive. We therefore began to investigate

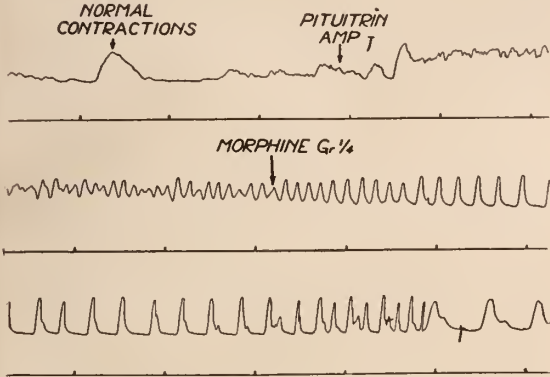


Fig. 5. Failure of uterus to respond to pituitrin following preliminary injection of progesterin.

other extracts of the corpus luteum. We were told that progesterone was only soluble in oily solutions. However, on testing out a water soluble extract made by Hynson, Westcott and Dunning, we were able to demonstrate that there was an appreciable amount of progesterone in the solution.

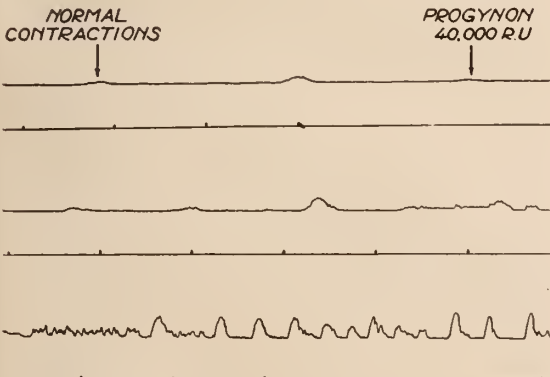


Fig. 6. The stimulating effect of morphine on uterine contractions initiated by pituitrin.

Figures 8 and 9, show that in five-cc. doses uterine contractions would definitely decrease in frequency and strength while ten cc. inhibited uterine action entirely.

Figure 10, is an extremely interesting tracing

showing the presence of the hormone progesterone in the circulating blood coming from the ovary containing the corpus luteum. The blood was withdrawn from the ovarian vein of a patient being operated upon in my clinic by my colleagues, Dr. William H. Browne and Dr. George Rezek. The blood was allowed to coagulate and the serum thus obtained was injected

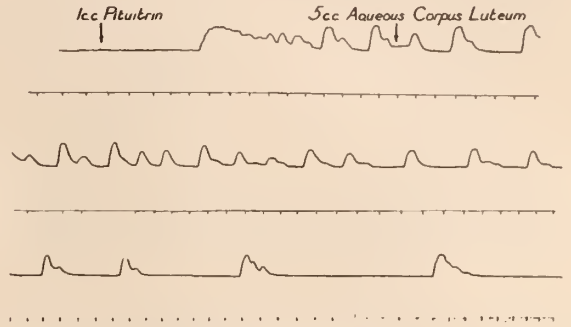


Fig. 7. The sensitizing action of estrogenic hormone on uterine contractions.

after contractions had been established by pituitrin, using the same technique and apparatus that had been used for the previous experiments. It will be seen that as little as two cc. had a dis-

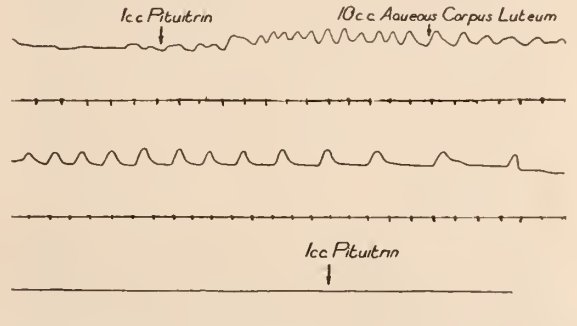


Fig. 8. The effect of corpus luteum extract on uterine contractions initiated by pituitrin.

tinct inhibiting action and that four and six additional cc. entirely inhibited the stimulative effect of one cc. of pituitrin.

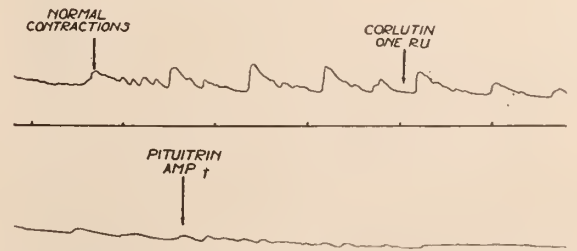


Fig. 9. The effect of 10 cc. of corpus luteum extract on uterine contractions stimulated by pituitrin.

My colleagues, Doctors Julius E. Lackner and Leon Krohn worked with me in a clinical study of the treatment of threatened and habitual abortion. A table showing the results of this management previously published is included, Figure 11. Since this was compiled many additional

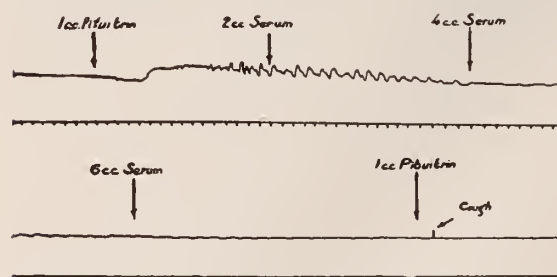


Fig. 10. The effect of blood serum from the vein of an ovary containing corpus luteum on uterine contractions produced by pituitrin.

cases have been added and the results are practically a duplication of our former observations.

What we have learned from further experience in the abortion cases is that it is important to determine whether or not the product of conception is still alive at the time the patient comes under observation. To this end we have used the "dead fetus reaction" worked out in my clinic by Dr. George H. Rezek. I had assigned Dr. Rezek the duty of making the injections and reading the reactions in the ovary of the test animals in all cases in which it was thought necessary to do a Friedman test for the diagnosis of pregnancy. One day he brought me a pair of ovaries saying that the reaction was neither strongly positive nor negative. He also made the statement that the fetus in that case was dead. I suggested that he get other cases with a known dead fetus and run the test in them. This was done and we were greatly surprised to find that in about 95 per cent. of the cases tested the reaction was sufficiently clear cut to make a diagnosis of death of the fetus extremely probable. Obviously progesterone preparations are only valuable in the treatment of those cases in which the fetus is alive. Complete, incomplete, and missed abortions are contraindications for its use.

Premature detachment of the placenta can be defined as a "glorified abortion." The cause of the detachment seems to be uterine contractions which are stimulated by the extravasation of blood between the placenta and the uterine wall. This is almost always a limited process at first

and only becomes extensive after the uterine contractions have caused extensive separation. Since this is so it would seem logical to apply progesterone by hypodermic injection in large doses as soon as the diagnosis of partial premature separation can be made from the early signs and symptoms. This we have been able to do in five cases with excellent results. The accident is especially apt to occur at about that period of gestation when the baby is on the border line of viability. Under these conditions if the uterus is emptied the fetal mortality rate will be very high. By keeping the uterus from contracting and thus preventing further placenta separation, the fetus may gain another three or four weeks of intra-uterine life which will practically insure its survival if then delivered by cesarean section. Of course if the baby is already close to term at the time of the first symptoms of premature separation, it should be delivered at once by cesarean section if there is any evidence of fetal distress as evidenced by abnormalities of the heart tones.

Placenta previa should be considered a premature detachment of the placenta which happens to be attached to the lower uterine segment.

The difference between it and the other types of premature detachment lies in the fact that the detachment is due to a thinning and stretching of the lower uterine segment, usually after the seventh month of pregnancy. Such a condition inevitably leads to separation of the placenta from the lower uterine segment and a hemorrhage of varying degrees of severity depending on the amount of separation. The mechanism of formation of the lower uterine segment depends in part at least, on the intermittent contractions of Braxton Hicks. In a given case presenting hemorrhage from placenta previa in which a non-viable or very premature baby is present in utero, progestin should be given to decrease uterine contractions and thus inhibit further formation of the lower uterine segment and further separation and bleeding until the fetus has attained viability; even in cases in which the bleeding occurs later in pregnancy it can be used to quiet uterine contractions pending arrangements being made for other forms of treatment.

Premature rupture of the membranes is one of the serious complications of pregnancy, and especially so when it occurs before or just at the seventh lunar month, because of the danger of

premature expulsion of the baby. In these cases we have used progestin preparations to prevent the onset of uterine contractions and have been successful in accomplishing this for varying periods of time from a few days up to a month. This has resulted in improving the chances of the baby to survive by reducing its prematurity. In these cases there is always a danger that the amniotic fluid will become infected from upward invasion of the bacterial flora of the vagina. When clinical evidence shows that this is taking place, the progestion injections are stopped and the uterus is allowed to empty itself, irrespective of the condition of the fetus.

The onset of premature labor has been controlled by the injection of progestin preparations. However, when labor has actually started, the effect of progestin on the frequency and strength of uterine contractions has been negligible.

TABLE I

Group	No.	Success	Failure
Threatened Abortions only. .	11	10 (91%)	1 (9%)
Habitual Abortions only.....	13	10 (77%)	3 (23%)
Threatened and Habitual Abortions	17	14 (79%)	3 (21%)
Total Cases treated with Progestin	41	34 (83%)	7 (17%)

Fig. 11. Clinical results in the treatment of habitual and threatened abortion by progestin preparations.

DISCUSSION: It is seen therefore, that in progestin preparations we have apparently a physiological agent which can be used in the management of obstetrical cases which are complicated by the fact that the uterus is abnormally irritable. As a result, hormone imbalance follows or some accidental complication of gestation. It is apparently ineffectual in the doses we had used in those cases in which the fetus is dead and in those patients who are in actual labor.

• The argument has been advanced that by treating women who are aborting, and preventing the expulsion of the fetus, that in a rather large percentage of cases the fetus will show developmental abnormalities. According to our experience there is no evidence that this is the case since there was no greater incidence of deformity in our treated cases that went on to maturity than in others not so treated.

We have assayed various products of progestin which are on the market and find that there is considerable difference in the potency of the preparations. In our hands the oily extract pre-

pared by Upjohn and Company and the watery extract prepared by Hyason, Westcott and Dunning have given the best results.

The prophylactic use of these preparations is also recommended. For example, a pregnant woman who is forced to take a long automobile trip, a pregnant woman who receives a severe mental shock, such as news of the death of a near relative, should be given prophylactically a few injections of progestin. It is well known that high temperatures tend to produce abortion and premature labor, therefore, in various diseases associated with febrile reactions, prophylactic use of progestin would seem to be indicated. In such cases the additional advantage in preventing abortion in an already infected patient with the attendant danger of subsequent puerperal sepsis is important.

As an index of the efficacy of this preparation, we may say that in the last year we have treated successfully, nine partial premature detachment of the placenta; one placenta previa; ten premature labors; one premature rupture of the membranes and two habitual abortions.

During the same time we treated unsuccessfully, one habitual abortion; one threatened abortion; two premature rupture of the membranes, and one premature detachment of the placenta.

With the evidence presented, both from the clinical and laboratory side, it is obvious that the use of progestin is of extreme importance in the management of habitual and threatened abortion, premature detachment of the placenta, placenta previa, premature rupture of the membranes and under any circumstance which might lead to undue stimulation of the pregnant uterus. The importance of its prophylactic use is stressed and its impotence in the presence of a dead fetus or after the onset of labor is pointed out. The importance of selecting physiologically active preparations is urged.

Primary tuberculous infection of the lungs usually takes place without any previous disturbance in the health of the child, reports McPherson who followed 850 children in the Brompton Hospital who showed a positive tuberculin test. The lesion is often a small one, and resistance to infection is usually sufficiently good to allow it to heal. The process of healing takes more than one year and the focus is always a potential source of dissemination of the disease during this time. It is probable that the rate of healing increases with improved nourishment and increased sunlight.—MacPherson, A. M. C., British Jour. Tuber., April, 1939.

OBSTRUCTION OF THE COMMON BILE DUCT BY STONES

WARREN H. COLE, M. D.

CHICAGO

Obstruction of the common duct by stones is, in reality, primarily a complication of cholelithiasis. However, in a few instances, perhaps less than five per cent., stones will be found in the common duct when they are not present in the gall-bladder. In such instances the stones may have passed from the gall-bladder through the cystic duct or may have been formed in the hepatic or common duct. The difficulty in determining the optimum time for operation and the frequency of hepatic insufficiency and other diseases, require an unusual amount of care and judgment in taking care of this condition. Not infrequently infection of a type such as suppurative cholangitis develops in such a fulminating way that emergency operations are necessary. There is a moderate disagreement as to the frequency of stones in the common duct due in part to the age of the patient and the duration of his cholelithiasis. In cholelithiasis Lahey¹ has reported an incidence of 15 per cent. in 258 cases of common duct stone with the percentage rising to 18 or 20 per cent. since he has increased the percentage of common ducts explored. The incidence of common duct stones in cholelithiasis in the patients encountered at our clinic here in the Illinois Research Hospital during the past five years has been still higher, being 22 per cent. However, in this case the unusually high incidence is perhaps explained on the basis that most of our patients belong to the group who have had cholelithiasis for a long time and many of whom have been neglected as far as therapy is concerned. Lahey has called attention to the important fact that the absence of jaundice does not preclude the possibility of stones in the common duct. He reports that in 39 per cent. of the cases jaundice was not present. This factor must, of course, be borne in mind at all times during operative procedures on the biliary tract and will be discussed in more detail later.

For centuries physicians have known that

stones in the gall-bladder or common duct may be passed through the sphincter of Oddi and be found in the stool; this subject has recently been reviewed by Ortmyer and Austin.² In fact patients themselves frequently are able to make their own diagnosis by finding these stones. Without question the error of the surgeon in missing stones in the common duct has been corrected spontaneously on innumerable occasions by this fortunate accident. Naturally we cannot use this unusual method of eradication of stones as an alibi for not making a diligent search for these stones in the common duct since obviously only the smaller ones could be passed.

SYMPTOMATOLOGY

Because of the fact that jaundice may be produced by numerous diseases other than stone in the common duct, the clinician is frequently confronted with extreme difficulty in making the correct diagnosis and in determining whether operation on the biliary system should be performed or whether the patient should be treated medically for a disease such as acute catarrhal icterus. Fortunately, in most instances the jaundice is preceded twenty-four or forty-eight hours by severe colicky pain in the epigastrium. However, epigastric pain occurs in so many other diseases that we cannot use this as a decisive means of making a diagnosis. In support of this statement we might briefly describe the clinical features of a female patient, aged 26, recently observed in the wards here at Illinois Research Hospital. This patient had severe right upper quadrant pain for two days preceding the onset of jaundice. The pain was so severe that muscle spasm was present. Very little fever was noted during the patient's stay in the hospital. Continued observation along with the age of the patient finally convinced us that the patient did not have a stone in the common duct but in reality was suffering from a hepatitis, probably incited by a disease such as acute catarrhal icterus. Naturally a laparotomy would be a serious load to be inflicted upon such a patient.

The duration of jaundice varies considerably. It is commonly intermittent and during the attacks of jaundice, fever or a chill is occasionally experienced. This fever is known as Charcot's intermittent fever and is no doubt dependent upon the ball-valve action of the stone in the terminal end of the common duct. In ne-

From the Department of Surgery, University of Illinois, College of Medicine and the Illinois Research and Educational Hospital.

Presented before the Section on Surgery, 99th annual meeting of the Illinois State Medical Society, Rockford, May 3, 1939.

glected cases jaundice may be present in varying intensity for years but during recent years when medical treatment is more easily obtained, we rarely encounter patients exhibiting such gross neglect. I would like to list below, however, certain features presented by a patient recently admitted to our wards.

A female patient, 57 years of age, number 63,528, was admitted with the history of onset of jaundice accompanied by severe itching of the skin of three years duration. During this time the patient complained of selective dyspepsia but abdominal pain, nausea, and vomiting were entirely absent. Although there were occasional instances during this time when the stools regained normal color for a few days, she has maintained

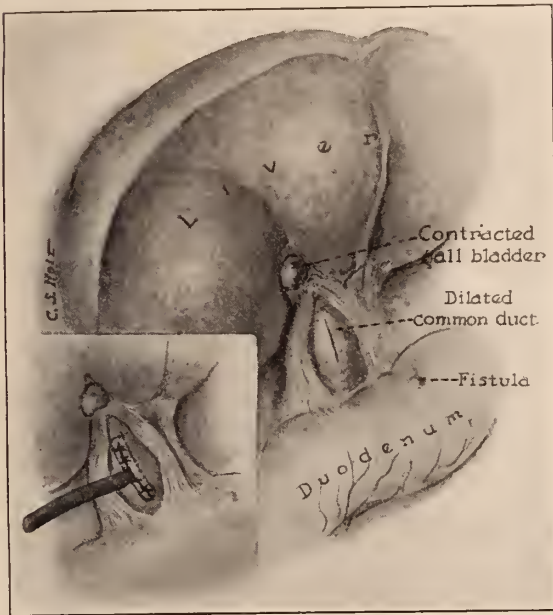


Fig. 1. This patient had jaundice of varying intensity for three years. Note the dilatation of the duct. The gall-bladder had shrunken down to a nubbin no greater than 1 cm. in diameter. It was attached to the duodenum; a cholecysto-duodenal fistula was present but was almost obliterated by spontaneous healing. Insert shows method of implanting the T-tube, after the duct has been explored and all stones removed.

a variable amount of icterus almost constantly during this time. She lost considerable weight, but during certain intervals when the jaundice appeared to lessen in intensity, would gain back part of that lost. Her weight dropped from 148 pounds three years ago down to 99 shortly before admission to the hospital. The absence of pain along with jaundice in a patient in the cancer age would point very strongly to the presence of a carcinoma, perhaps in the head of the pancreas. True enough the duration of jaundice over a period of three years would be slightly against the possibility of carcinoma. More important in the differentiation is an accurate investigation into the patient's history which discloses the fact that during several instances over

this three-year period there was a decrease in jaundice with gain in weight, etc. Such a history would practically never be encountered in obstruction of the common duct by carcinoma. We finally became convinced that the patient had a stone in the common duct and operated upon her. One large stone was found in the common duct and removed. The gall-bladder had shrunken down to a tiny fibrosed nodule (see Fig. 1) no greater than 1 cm. in diameter. There was obviously no stone in the gall-bladder. Since the patient was in poor physical condition, we considered it unwise to dissect out this fibrosed gall-bladder and left it in.

I present this patient primarily to emphasize the necessity of going into the history thoroughly and of recognizing the fact that all cases of stone in the common duct are not accompanied by pain. Contrary to this law, carcinoma of the pancreas, or more frequently, carcinoma of the terminal end of the common duct may be associated with severe epigastric pain. A female patient, aged 55, recently observed, illustrates this point. She had complained of jaundice of ten weeks' duration preceded by and accompanied by severe epigastric pain. After due consideration we made the diagnosis of stone in the common duct but at operation carcinoma of the terminal end of the common duct, completely blocking it, was found.

The cases mentioned above illustrate then that we dare not make a diagnosis of obstruction of the common duct by an inoperable tumor lest we deprive some patient of a cure which might be obtained by removal of a stone in the duct.

Patients with stone in the common duct usually have anorexia and likewise lose weight. Bradycardia is fairly constantly observed. In many instances there is a definite mental depression which is presumably secondary to toxic effects of bile salts. After the initial attack of pain, which is usually located in the right upper quadrant and epigastrium, and occasionally radiating posteriorly to the spine or to the right of the spine, pain becomes insignificant. The patient, however, may retain tenderness in the epigastrium. Examination of the stool for the presence of bile is extremely important for the reason that jaundice of intrahepatic origin or of hemolytic origin will usually be associated with bile in the stool. In the face of a jaundice which is not diminishing in intensity the presence of bile in the stool may be the only and deciding factor pointing to the diagnosis of intrahepatic jaundice of toxic or infective nature. One can realize the extreme importance of making an accurate diagnosis since we realize that patients with jaundice produced by toxic hepatitis are always severely ill because of the intense hepatic

insufficiency and will frequently succumb to laparotomy.

PREOPERATIVE PREPARATION

Since hepatitis is a rather constant accompaniment of cholecystitis (Graham) and since this occasionally is of such intensity as to produce hepatic insufficiency, most patients with stones in the common duct must be carefully prepared before operation, particularly since the strain of the obstructive jaundice adds to the patient's inability to withstand operation. It is true, however, that most patients with stones in the common duct who develop jaundice rarely recover spontaneously in contrast to the patients mentioned previously who pass small stones in the absence of jaundice. It is extremely important, as we have learned from experience, that the patient not be operated upon while the jaundice is increasing in intensity. This will mean that almost invariably patients should be treated by hospitalization for several days before operation is performed. Frequently the actual obstruction of the duct will be preceded by sufficient dyspepsia and pain to prevent the patient from eating. He may, therefore, lose considerable weight and his liver likewise be depleted markedly in glycogen. It is important, then, in practically all instances that the patient be given a high caloric and fluid intake (particularly high in carbohydrates and proteins) for several days before operation. If nausea and anorexia prevent sufficient oral intake, intravenous fluids, particularly with glucose, will be indicated. Ordinarily five per cent. glucose is tolerated more readily than ten per cent., but since the administration of as much glucose as possible is indicated, the injection of ten per cent. glucose may be preferable. Winslow³ has recently shown that 98 per cent. of a five per cent. glucose solution injected intravenously is utilized provided the injection is given no faster than 300 to 500 cc. per hour. It has been shown that glucose is one of the most important factors in the restoration of a normal hepatic function and likewise prevents the hemorrhagic tendency which is so serious in common duct obstruction. Somewhat on empirical grounds calcium gluconate up to one gram per day orally or intravenously is recommended by many surgeons. There is some evidence to indicate that the administration of calcium is beneficial in hepatic insufficiency (Lamson⁴ and asso-

ciates). Transfusions are strongly indicated, not only to increase the patient's resistance particularly as related to operation, but also to prevent the hemorrhagic tendency.

The tendency toward bleeding in jaundice is, however, more adequately combated by the administration of vitamin K which has only recently been discovered. Dam,⁵ Quick,⁶ and Snell⁷ and others have demonstrated conclusively that vitamin K when given with bile salts will counteract the bleeding tendency by correcting the deficiency in prothrombin. Important in the development of this discovery was the observation made by Roderick⁸ a few years ago that the fatalities occurring in cattle in sweet clover disease were dependent upon hemorrhage which in turn was caused by a prothrombin deficiency. The administration of vitamin K must be accompanied by the oral administration of bile salts. This therapy appears to be so effective as to perhaps justify its institution in all patients to be operated upon for stone in the common duct. Recently McNealy⁹ and associates have shown that vitamin D in the form of viosterol along with bile salts will likewise prevent the bleeding tendency in jaundice.

Observations during the past year or two indicate that possibly the administration of vitamins C and B₁ are helpful in preparing jaundiced patients for operation. More experience is necessary before we can determine the efficiency of this therapy.

THE OPERATIVE CONSIDERATIONS

As intimated previously, it is extremely important that the optimum time for operation be chosen. Occasionally liver function tests such as dye tests, blood proteins, hippuric acid tests, galactose tests, etc., will be helpful in determining operability. As previously mentioned, the operation should not be performed in the face of an increasing intensity of jaundice, yet it should not be delayed too long because of the toxic effect of the jaundice, but more primarily because of the danger of complications. Once the diagnosis is established operation is practically always justified regardless of age, particularly if preoperative treatment has been conscientiously carried out.

As intimated previously during the preoperative preparation of patients with stone in the common duct, complications such as suppurative cholangitis may develop. Rarely will any diffi-

culty be encountered in diagnosing this condition which in reality demands immediate therapy for its relief. Commonly the patient suddenly develops a chill with fever which recurs almost daily. The general appearance of the patient indicates the gravity of the situation. The patient refuses to eat, thereby increasing the hepatic insufficiency. Tachycardia is a prominent feature. Tenderness and muscle spasm will be variable in the epigastrium and right upper quadrant. If this infective process shows no tendency to recede within thirty-six hours, immediate operation is usually indicated so that the obstruction may be relieved and the progression of the suppurative cholangitis be combated.

After choosing the optimum time after adequate preparation of the patient as described above, operation should be performed with the idea of primarily relieving the obstruction of the duct. A lengthy incision is usually indicated to insure ready access to the bile ducts. Short incisions are not uncommonly the direct cause of inadequate exposure and serious accidents. Adhesions should be separated from the junction of the cystic and common ducts and the common duct be exposed. Before the incision is made in the common duct, it is usually advisable to aspirate the structure lest an anomaly involving the portal vein or hepatic artery confuse the operator. The appearance of the bile obtained by aspiration is frequently helpful in determining the possible presence of stones in the duct, particularly since turbid bile commonly is indicative of the presence of stones within the duct. After removing the stones from the proximal and distal portion of the duct with scoops and probes, it is usually justifiable to pass a sound or dilator through the sphincter of Oddi. Walters¹⁰ and associates and others have emphasized the fact that this may prevent biliary dyskinesia and at the same time encourage the passage of small stones which may be left by the operator. However, Zollinger¹¹ and associates have shown by experimental means that too strenuous dilatation may result in so much trauma as to produce an actual stenosis later. In most instances the gallbladder should be removed along with exploration of the common duct. In emergency situations when the physical condition of the patient is extreme, it may not be excised but should be opened, and drained after stones have been removed. The T-tube inserted in the common duct

should be of sufficient caliber not to plug readily. The incision of the duct should be closed snugly around the tube so as to prevent leakage of bile. It is usually advisable also to insert a drain down to the region of the operative site when the wound is closed.

Occasionally a stone will become impacted at the sphincter of Oddi in such a manner that it cannot be extracted through an incision in the common duct. The surgeon should be careful not to expend too much time in attempting to extract it through the incision in the common duct, particularly since trauma created by his attempts may be followed by disastrous results. It is much safer to make a longitudinal incision in the duodenum as was done in a patient as illustrated in Fig. 2, and the region of the sphincter

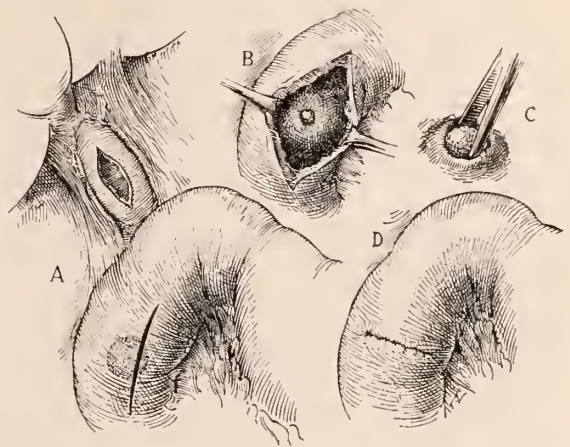


Fig. 2. Occasionally stones in the terminal end of the common duct cannot be dislodged and removed through the incision in the duct. It will then be necessary, as illustrated above, to incise the duodenum (longitudinally) and extract the stone. In this case the stone was accessible through the dilated ampulla of Vater, but not all cases will be as simple as this. Closure of the duodenum is made transversely and is rarely followed by complicating features.

of Oddi exposed. Usually the stone will be found close to the papilla and commonly even be visible. It is usually very simple to dilate the sphincter of Oddi and extract the stone with forceps. The incision in the duodenum is then closed in a transverse direction after the Mikulicz fashion.

POSTOPERATIVE CARE

The ordinary routine of gradually increasing oral intake following laparotomy will apply to operations on the biliary ducts. For the first 24 hours probably nothing by mouth but water would be indicated. Naturally fluids up to 3000 cc. per day will have to be maintained by other

means and perhaps most advantageously by the intravenous route. This will allow the administration of glucose (five or ten per cent.) which will, as mentioned previously, aid the liver in maintaining its glycogen content. It is frequently a good procedure to give the patient a transfusion after operation. This is particularly indicated if there is the slightest evidence of shock. As the oral intake increases the intravenous fluids may be decreased. Because of the tendency for wounds in jaundiced patients to disrupt, it is essential that dressings be applied snugly and that a tight binder likewise be worn at all times. Trauma of any type including even that inflicted by a postoperative cough should be eliminated as much as possible to protect the wound from evisceration. The T-tube should, of course, be connected with a bottle and the bile collected and measured in this way. Some surgeons are of the opinion that patients who are critically ill because of their common duct obstruction should not have their duct decompressed rapidly. They advise clamping the tube a great many hours per day for the first few days to prevent hepatic injury consequent to the sudden decompression. I, personally, have not been impressed with the possibility that sudden decompression leads to hepatic damage.

Since the hemorrhagic tendency in patients who are jaundiced is perhaps greatest between the third and sixth day, it is important that measures adopted to combat it should be maintained for several days. In other words, vitamin K should be administered daily along with bile salts. Bile draining from the choledochostomy may be given to the patient orally, perhaps through a nasal tube, but Gray¹² and associates have cautioned that the bile of patients recently operated upon is low in bile salt content. If bile salts are given in the form of bile draining from a T-tube it should, therefore, be obtained from another patient who has been operated upon at least one week previously. After a week or ten days, the T-tube may be clamped for an hour each day increasing gradually until it can be clamped completely for 12 to 18 hours at a time. After the patient is able to tolerate blockage of drainage from his T-tube without pain, discomfort, etc., removal of the tube may be considered. Ordinarily it should not be removed under three weeks. In the author's experience four or five weeks would be the average time for removal of

the T-tube. However, if jaundice does not clear or there are indications that there is an obstruction at the sphincter of Oddi, the T-tube must not be removed. Best¹³ and others have emphasized the value of cholangiography in the search for stones left in the common duct by the surgeon. Best has likewise recommended procedures consisting of irrigation of the common duct with warm olive oil and administration of nitroglycerin in an endeavor to encourage the passage of stones through the sphincter of Oddi.

COMPLICATIONS

The complications of common duct obstruction should be divided into preoperative and postoperative. Of the *preoperative* complications, suppurative cholangitis is by far the most serious. The case history of a 44-year old woman who developed colicky pain in the epigastrium and right upper quadrant three months before entry to the hospital illustrates this complication. This was followed in 24 hours by jaundice. Occasionally she had fever and mild chills. However, for several days her temperature was normal and she complained relatively little of pain, etc. Suddenly one day she developed a chill and high fever; chills with fever persisted for three or four days. As mentioned previously, the development of a chill with fever lasting several hours is not an uncommon occurrence in obstruction of the common duct by stone, but is usually temporary. If the fever and chills persist longer than three or four days, it white bile loaded with pus cells, in the common a cholecystostomy as well as a choledochostomy was performed. The temperature gradually receded until it came to normal on the eighth day. is justifiable to assume that a serious suppurative cholangitis is developing in which case drainage of the common duct is essential. On the fourth day after the first chill we decided upon emergency laparotomy with drainage of the common duct, hoping to prevent progress of the cholangitis and likewise prevent the development of multiple abscesses of the liver which are so consistently fatal. At operation the patient had white bile loaded with pus cells in the common duct. One stone was removed from the duct and a cholecystostomy performed. The temperature gradually receded until it came to normal on the eighth day.

Complications such as pancreatitis, either the

acute or chronic type, are relatively uncommon in obstruction of the common duct by stone. The patient described in the preceding paragraph, however, did have a chronic sclerosing pancreatitis which did not allow satisfactory exit of bile through the sphincter of Oddi for several weeks. In such cases the T-tube should be left in until bile flow is reestablished.

Occasionally the kidney becomes affected, presumably because of the action of bile salts upon it. The urine should be carefully watched for kidney damage. Uremia occasionally results directly from this renal lesion. A nonprotein nitrogen determination of the blood may be helpful in determining the severity of the nephritis.

Postoperative complications are not as numerous as those encountered before operation. Hepatic insufficiency may develop postoperatively: cases which present symptoms are usually fatal, but fortunately rare; it develops postoperatively, perhaps because of the added load of the operation inflicted upon the patient. It may occur several days after operation and is commonly manifested by a diminution in output of bile, restlessness or lethargy, fever and tachycardia, later followed by anuria and delirium. There is no specific therapy for this condition. Procedures such as administration of glucose, transfusions, administrations of vitamins K, C and B₁ and calcium may be tried.

The complication most to be feared in convalescence of the patient is a recurrence of jaundice or a failure of it to be relieved. Unfortunately, it is very difficult to remove all stones from the common duct on all occasions. Undoubtedly all surgeons have their weak moments and leave stones in the common duct. Fortunately the ones left are usually small and will be passed. If the stone is large enough to produce obstruction, jaundice and recurrence of other symptoms will develop. If careful consideration of the patient's manifestations point to the presence of another stone, a second operation may be necessary for its removal.

Fortunately stricture formation at the site of the opening in the common duct rarely occurs. Usually if obstruction of the common duct occurs in the absence of stones, it is dependent either upon undue trauma or upon an inflammatory stricture. Naturally such accidents as amputation of part of the common duct or transverse

section of it will result in serious effects and will be evident soon after operation.

Wound infections and development of abscesses in the region of the operative site including the diaphragmatic space are not very prone to occur.

SUMMARY

Differential diagnosis between stones in the common duct and other conditions including particularly jaundice produced by toxic hepatitis and carcinoma of the pancreas or ampulla of Vater may be extremely difficult. The most valuable points in favor of stone in the common duct is fluctuating jaundice or alternation of acholic stools with brown stools. However, frequently a satisfactory differential diagnosis cannot be made. It is justifiable to explore practically all patients with *obstructive jaundice* (of the extrahepatic type) if they are safe operative risks, because stones are so commonly found when a carcinoma of the pancreas is expected. Obviously, patients with jaundice produced by toxic and infective jaundice are excluded from this group demanding exploration; jaundice of this type is intrahepatic in origin differentiated (sometimes with difficulty) by age, color of stool, local findings, etc. Indications for opening of the common duct are palpable stones in the duct, dilatation of the duct, jaundice or a recent history of jaundice, and thickening of the wall of the duct. Adequate preoperative and postoperative care including high fluid and caloric intake, intravenous glucose, transfusions and preoperative as well as postoperative administration of vitamin K with bile salts are important items in maintaining a low operative mortality.

BIBLIOGRAPHY

1. Lahey, F. J.: Stones in the gall-bladder and bile ducts, *Surg. Cl. North Am.* 15: 1459, 1935.
2. Ortmayer, M., and Austin, M.: The passage of gallstones through the sphincter of Oddi, *Am. J. Dig. Dis.* 5: 411, 1938.
3. Winslow, S. B.: Dextrose utilization in surgical patients, *Surgery* 4: 867, 1938.
4. Lamson, P. D.; Minot, A. S., and Robbins, B. H.: Prevention and treatment of carbon tetrachloride intoxication, *J. Am. M. Ass'n.* 90: 345, 1938.
5. Dam, H.: The anti-haemorrhagic vitamin of the chick; occurrence and chemical nature, *Nature* 135: 652, 1935. Dam, H. and Glavind, J.: Vitamin K in human pathology, *Lancet* 1: 720, 1938.
6. Quick, A. J.: Stanley-Brown, Margaret and Bancroft, F. W.: A study of the coagulation defect in hemophilia and in jaundice, *Am. J. Med. Sc.* 190: 501, 1935. Quick, A. J.: The nature of the bleeding in jaundice, *J. Am. M. Ass'n.* 110: 1658, 1938.
7. Snell, A. M.: Hugh, R. B., and Osterberg, A. E.:

Treatment of the hemorrhagic tendency in jaundice; with special reference to vitamin K. *Am. J. Dig. Dis.* 5: 590, 1938.

8. Roderick, L. M.: The pathology of sweet clover disease in cattle, *J. Am. Vet. Med. Ass'n.* 75: 314, 1929.

9. McNealy, R. W.; Shapiro, P. F., and Melnick, P.: The effect of viosterol, *Surg. Gynec. and Obst.* 60: 785, 1935; McNealy, R. W.: Preparation of the jaundiced patient for operation, *Am. J. Surg.* 40: 237, 1938.

10. McGowan, J. M.; Butsch, W. L., and Walters, W.: Pressure in the common bile duct of man, *J. A. M. A.* 106: 2227, 1936; McGowan, J. M.; Butsch, W. L., and Walters, W.: The use of glyceryl trinitrate for the control of pain following cholecystectomy, *Ann. Surg.* 104: 1013, 1936.

11. Zollinger, Robert; Branch, C. D., and Bailey, O. T.: Instrumental Dilatation of the papilla of Vater, *Surg. Gynec. and Obst.* 66: 100, 1938.

12. Gray, H. K.; McGowan, J. M.; Nettrour, W. S., and Bollman, J. L.: Hepatic damage in biliary disease. Its relation to the concentration of bile acids in the bile, *Arch. Surg.* 37: 790, 1938.

13. Best, R. R.: Cholangiographic demonstration of the remaining common duct stone and its nonoperative management, *Trans. West. Surg. Ass'n.* 135: 1937.

DISCUSSION

Dr. J. R. Buchbinder, Chicago: I cannot open this discussion without paying tribute to the contributions that Dr. Cole has made to the literature of bile tract surgery, particularly his work in giving us cholecystography, in collaboration with Evarts Graham, one of the greatest contributions that has been made to the clinical field of bile tract surgery.

The common duct is the most important problem with which the surgeon has to deal in attacking a gall-bladder with stones. When jaundice is present, or when there has been a definite history of jaundice, there usually is a definite indication for exploration of the common duct. As Dr. Cole indicated, in the absence of jaundice or palpable stones, even in the presence of an enlarged duct, it is not always easy to decide whether such ducts should be explored, since we know that the duct may be enlarged from causes other than obstruction. However, a surgeon experienced in bile tract surgery may explore a considerable percentage of common ducts with a mortality not appreciably higher than that of simple cholecystectomy. It must be remembered that in many patients where cholecystectomy alone is a relatively simple procedure, adequate exposure of the common duct may be quite difficult, since the amount of the supraduodenal portion of the duct varies considerably. I believe we should emphasize the importance of adequate exposure in all bile tract surgery; adequate exposure is extremely important in common duct exploration. Dr. Cole mentioned transduodenal choledochotomy. This is an extremely valuable, and probably the most reliable, method of exposing the ampulla. To attempt to grasp a stone firmly impacted in the ampulla through a remotely placed incision in the supraduodenal portion of the duct may not only result in failure or serious trauma, but, most important of all, other stones in this vicinity may be overlooked.

In exposing the ampulla through a transduodenal incision it is extremely necessary to know exactly where the former is located. The technique of splitting the ampulla and lifting out a stone or stones during retrograde exploration and the subjects of proper physiologic preoperative preparation have been emphasized.

I do not believe that we can over-emphasize the importance of proper preoperative preparation, particularly the prophylaxis of hemorrhage and the value of vitamin K, which Dr. Cole has also mentioned. When we are successful in removing an obstructing stone, and when jaundice promptly recedes, it makes little difference what we do so long as we maintain fluid balance. When jaundice does not recede, that patient is in danger of hemorrhage unless we take adequate precaution against bleeding.

Dr. Cole mentioned the matter of the T-tube. It is not clear to me whether he believes in putting T-tubes in the larger ducts in which obstruction was not present at operation. This is a point on which there is a considerable difference of opinion today. Personally I am opposed to the use of a T-tube except in the presence of obstruction. I think there can be no argument on its use in the presence of jaundice, or following transduodenal choledochotomy, particularly if it has been necessary to split the ampulla. When stones in the common duct have been symptomless, it has been my practice to suture the duct tightly and place a soft rubber drain down to the suture line. Incidentally, it is not always easy to be certain of the patency of the ampulla without transduodenal exploration. Following cholecystectomy, the ampulla will be relaxed and patent for a considerable period of time and any slight leakage at the suture line will readily be taken care of by a small rubber drain.

There is another question I should like to discuss for a moment, although it may be without the scope of this paper. I feel tempted to mention it because I have had a fair experience with it and some uncertainties in the differential diagnosis, namely the matter of post-cholecystectomy colic. Patients may develop colicky pain of such severity, following cholecystectomy, as to require morphine, even though a stone is not present. I am referring to the differential diagnosis between a stone left behind in the ampulla and a spasm of the sphincter of Oddi, so-called dyskinesia. Attacks of the latter do not produce jaundice in my experience, though bile may be present in the urine. No single attack is likely to outlast the effect of a single dose of morphine and the response to amyl nitrite or nitroglycerin is usually prompt. It must be always borne in mind, however, that upon the surgeon rests the problem of excluding overlooked stones whenever post-cholecystectomy colic occurs.

I think we should be very grateful for this presentation by Dr. Cole.

A Place in the Sun—The moment that we get people to living properly we shall see an enormous reduction in disease. One of the most extraordinary things is that the good Lord gives us sunshine and chlorophyll and other things that science talks about and yet when the sun appears man hides himself and when it disappears he comes out in the open again. God puts His people in the sun and then society comes along and shoves His people back into dungeons and behind bars and in dark rooms—and that is what we call civilization.—Gaha, F., *British Jour. Tuber.*, July, 1937.

THE INFLUENCE OF HEALTH EDUCATION UPON THE PRACTICE OF MEDICINE

W. W. BAUER, B.S., M.D.

Director Bureau of Health Education,
American Medical Association,

Associate Editor, *Hygeia*, The Health Magazine

CHICAGO

Health education, like many other phases of the public health movement, was begun by the doctor. Then it passed into other hands. As a result, the movement has in many instances progressed to a point where its influence upon the doctor is greater than the doctor's influence upon it. Now, a return swing of the pendulum is evident.

Health education was among the first considerations of the newly formed American Medical Association, meeting in Philadelphia in 1847. In the proceedings¹ of this original meeting we find references to the need for study and information about sanitation, vital statistics, milk and water supplies and other matters in the field of public health. A surprisingly large percentage of the time at this first meeting and at subsequent meetings was spent in discussion, not of clinical topics, but of matters relating to the public health and welfare.

Ever since, the Association has concerned itself regularly with various matters having an influence upon the public health and implying the education of the public. The *INDEX AND DIGEST OF OFFICIAL ACTIONS*² gives the key to the progressive handling of many topics of interest to the public. Taking only those listed under the first two letters of the alphabet, we find references to "Alcohol," which shows progressively the action of the Association on beverage alcohol in 1917 and 1921 and again in 1922, the first being a resolution proposing and discouraging the use of alcohol as a beverage and therapeutic agent and the two latter setting forth the position of the Association with respect to the use of alcohol under Prohibition regulations. On the subject of animal experimentation, the Association has been on record since 1918 in defense of the necessity for unrestricted performance by proper persons of scientific experiments on living animals. The Association has supported since 1911 the measures

for prevention of ophthalmia neonatorum and trachoma and for the prevention of wood alcohol poisoning. In connection with blindness, the Association in 1933 adopted a resolution calling for the combined efforts of the medical, the social and the public health authorities to cooperate in making blood examinations of all pregnant women and the treatment of those infected with syphilis and the prevention of blindness and other subsequent tragedies. And so—through the alphabet.

The Council on Health and Public Instruction was founded in 1911 and became a Bureau under the same name in 1923. In 1938 it was renamed Bureau of Health Education. In 1923, *HYGEIA*, the Association's health magazine, was established, although it is interesting to note that the House of Delegates received the following report in 1868³:

"Where, then, is the popular medical periodical, having the sanction and authority of the American Medical Association, enlisting the best talent of the country, enlightening the people in physiology, hygiene and kindred topics, presenting a condensed popular view of the progress of medical science and art, enlivened by biography and appropriate fiction and poetry, and commanding its hundreds of thousands of readers?"

The American Medical Association began the use of the radio in 1923 and has used it continuously ever since; during the last four years it has been responsible for the only continuous non-revenue network health program in dramatized form.

All of the bureaus and councils of the American Medical Association have important educational functions either for the physician or for the public, or both. As a matter of fact, the entire influence of the medical profession has been exerted habitually through education rather than through compulsion. The Association has never possessed nor desired any legal authority to further its objectives, but has achieved them or progressed toward them by utilizing educational means. The Council on Pharmacy and Chemistry, the Council on Physical Therapy, the Council on Foods, the Bureau of Investigation, the Bureau of Medical Economics, and the Bureau of Legal Medicine and Legislation have all functioned primarily by ascertaining the facts and making them known.

One of the most successful examples of the power of public education was demonstrated in the reform of medical education in this country

¹Read at the Secretaries' Conference, Illinois State Medical Society, Rockford, Illinois, May 2, 1939.

largely through the influence of the Council on Medical Education and Hospitals, which ascertained the facts about medical schools and brought them into the open. The result was the collapse of unworthy medical schools and not only the survival but the improvement of the better schools.

It would therefore be a mistake to assume that the educational functions of the American Medical Association are expressed exclusively through the Bureaus of Health Education and of Exhibits, through *HYGIEIA* and through radio broadcasting. These departments are devoted primarily to communication with the public, but they depend for their information on the other bureaus and councils. Many of the latter, especially the Bureau of Investigation, have considerable contact with the public. The *JOURNAL A.M.A.* is widely quoted, not only in professional publications, but in lay publications, textbooks, magazines and the press and, therefore, exerts a powerful educational influence, not only on the profession, but on the people.

Not only does the American Medical Association from its Chicago office have extensive policies and activities in health education, but State and county medical societies are doing a tremendous amount of work along this line. As far as our present information goes, we know of regularly organized press releases by the State medical societies of Alabama, Arkansas, California, District of Columbia, Illinois, Indiana, Maryland, Michigan, Missouri, North Carolina, Pennsylvania, West Virginia, and Wisconsin and probably others of which we are not informed. During 1938 State medical societies utilizing the radio included those of Michigan, Ohio, Florida, Indiana, Mississippi, Colorado, New Jersey, Illinois, Minnesota, Rhode Island, Arizona, Wisconsin and the District of Columbia. In addition 128 county medical societies had radio programs. Numerous medical societies from time to time have special projects, such as halls of health, State fair exhibits, participation in Summer Round-Up campaigns, syphilis campaigns, immunization projects, May Day demonstrations, and innumerable other activities which are so varied and variable that it is impossible for the American Medical Association headquarters to keep itself informed except as information is voluntarily sent in or as requests

are received for cooperation, material, or suggestions.

Not only does the medical profession itself take a very active interest in health education, but numerous other agencies have entered this field. At a meeting called in New York⁴ in November 1938, approximately 40 national agencies interested in health education were represented. These included the medical, dental and nursing professions, the so-called voluntary health agencies in the fields of tuberculosis prevention, cancer control, conservation of vision, aid to the hard of hearing, mental hygiene, heart disease, and numerous other special fields. It included also such special groups as the member organizations of the National Health Council, the National Congress of Parents and Teachers, the American School Health Association, the American Association of School Administrators, the National Collegiate Athletic Association, the National Council of Parent Education, the American Home Economics Association, as well as departments of the Federal Government interested in health education. The multiplicity of such organizations indicates not only a widespread, popular interest in the subject, but is in itself convincing proof that so far-reaching a movement can hardly help having a profound influence on the practice of medicine.

Not only professional and voluntary agencies, but governmental departments are entering or have entered the field of health education. In the Federal Government alone, the United States Public Health Service, the United States Children's Bureau, the United States Office of Education, the United States Bureau of Home Economics, the Accident Prevention Conference, the several White House Conferences, the so-called Child Health Recovery Conference, the United States Bureau of Mines, the Federal Vocational Rehabilitation Board, the United States Bureau of Animal Industry and the United States Bureau of the Census take an interest from one angle or another in the health of the people and translate that interest, through actual service, publications, radio programs, speakers and legislation, into educational influences. Add to these the health education activities of State health departments, of which at least 16 have recently added health education directors to their staffs, and of city and county health departments, or county nurses working alone, all of whom have

important educational functions, and the extent to which the public must inevitably become informed is practically immeasurable.

It was hardly to be expected that potentialities in health education would escape the attention of enterprising persons in commerce. The health appeal is among the most potent of all appeals for the sale of goods. One need only look about him to see the manifestations of the appealing power of health claims when he observes vitamins in cough drops, hair tonics, skin creams and beer, as well as in milk and other food products where they logically belong. Or consider the effectiveness of the appeal to come over on the alkaline side, which is utilized by purveyors of mineral waters, by food fad promulgators and by venders of headache preparations, laxatives and stomach tablets. Health claims for foodstuffs have been so blatant in some instances that the American Medical Association established a Council on Foods to evaluate health claims for foodstuffs. New food and drug legislation has passed the Congress and is in process of being put into effect.

The potency of claims for easy cures for chronic disease is well known to physicians, who see on every hand the exploitation of patients by unscrupulous quacks and promoters, mostly outside the profession, but occasionally within. The sales potency of claims for reducing preparations is exceeded only by the ridiculousness of certain claims or the deadliness of certain preparations. The investing of perfectly ordinary soaps with magic qualities which no soap can possess is a matter of everyday experience. Dentifrices and mouth washes have been played up far beyond any reasonable expectation of performance, with commercial results undoubtedly satisfactory to the promoters. To cite more instances would merely be to labor the point.

It is important and fitting now that a word should be said on the other side of the commercial picture. The condemnation of inaccurate and misleading advertising demands, in fairness, a recognition of advertising which is constructive, accurate and useful. A great deal of useful material from commercial sources must be acknowledged. Such advertising is that of insurance companies, biological manufacturers, food manufacturers or distributors and the makers and distributors of products, materials or

services useful in the maintenance or promotion of health. Outstanding among these are the publications of the several dairy councils, of food manufacturers or associations of manufacturers whose advertising in promotion of their product has been found acceptable to the Council on Foods because of its accuracy, fairness and restraint and the truthful material published by representatives of the soap and glycerine industry on topics of cleanliness and expository types of advertising setting forth the advantages in the diet of certain foodstuffs occurring in nature.

In the midst of this growing welter of activity in health education the doctor finds few situations in which it does not influence his practice. This is for the simple reason that it influences his patients. It is virtually impossible to avoid meeting with health claims for foods, drugs, cosmetics, devices or services unless one refrains from reading newspapers, mailed circulars, magazines, or books, turns a deaf ear to the radio, never attends a club meeting, totally ignores billboards, street car cards and other forms of poster advertising, and never converses with his friends.

It is small wonder that the patient is confused. He is assailed on every side with scare advertising. He is warned against wrecking his romance with syphilitic infection and at the next glance he observes that apples, traditionally the fruit which is supposed to keep the doctor away, have derived new potency as "healthier-uppers and snuffle-wowers"!!!. The orange is far more important than you would suspect from your knowledge of its vitamin C content, its citric acid and small contribution of calcium; according to the street car cards, it is a definite means of preventing colds and a powerful factor in their treatment. The lemon is more than the "manings" of lemonade or a garnish for the fish; it is now, with the aid of baking soda, a first aid "when Nature fails." Even candy, by virtue of dextrose, is more than a sweet with a proper place in the diet; it has become an important factor in the health and energy of the nation.

Among the more extreme claims, which The JOURNAL A. M. A. on one occasion designated as "raw claims for raw foods,"⁵ are the so-called mineral cocktails derived from vegetable juices squeezed by special crushing-choppers which in

every respect except the price bear a suspicious resemblance to the ordinary food chopper familiar in every kitchen. The exploitation of seaweed, alfalfa, dried sponges and so-called sea vegetables for their content of iodine and other minerals, is a thriving business. Vitamins now appear in capsules and tablets instead of in natural foods, and are good for whatever ails you. In many of our larger cities there are "health food" stores and "health food" cafeterias in large numbers which seem to do a thriving business. Even the more conservative restaurants have been compelled to make concessions to popular demand in the form of health salads and reducing meals. Sometimes they have gone so far as to exploit some of the more popular current diet fads. The physician meets this situation in the attitudes which his patients develop.

Some of the correspondence received by the American Medical Association shows how erroneous attitudes are displayed by patients toward their physicians. As a result of a little knowledge, patients assume that they are competent to decide such matters as whether a hernia should be treated by injection or by operation; they attempt to decide what type of anesthesia should be used for a given surgical operation. In one amusing instance a gentleman proposing to have a periodic health examination wrote for the name and address of an x-ray laboratory in order that he might go and have his head x-rayed so that he could take the x-ray to the doctor and thus help him in his examination! Patients who have read much about the laboratory are inclined to place it above the physician in importance and the same attitude is often manifest toward hospitals and clinics. A feeling has grown up in the public mind that hospitals and clinics, rather than the doctors who work in them, are of paramount importance. Patients write to the American Medical Association stating that a physician has given them instructions for the use of a certain drug but that they are unwilling to take it until they have investigated for themselves its usefulness and its possible dangers. They are not aware of their own limitations in arriving at a decision, even if they could be placed in possession of all the facts.

These are some of the negative results of health education. They have made a tremendous

impression upon many physicians and have been responsible for a feeling that there has been too much health education of the public. This feeling, in my judgment, is not justified and I am glad to say that it is disappearing from medical circles. I think it is disappearing because the positive and beneficial results of health education far overshadow the negative by-effects.

Among the positive benefits assignable largely to health education we must include such improvements as better community sanitation, water purification, sewage disposal, improved milk supplies, beginnings toward elimination of soot and noise from our environment. The acceleration in the decline of the tuberculosis death rate is a manifestation of educational influence. The slow but apparently steady building up of a roster of apparently cured cases of cancer and the awakening consciousness of what can be done to alleviate this disease, is purely an educational product. Improvement in infant health is the result in large part of the training of young mothers in the care of their babies, plus the availability of pure water and pure milk. The steady increase in size and weight of our people is due to the wide adoption of a better, if not yet a perfect, diet. The decline of smallpox and diphtheria where vaccination and immunization have been practiced is due to educational leadership.

Even in the patent medicine field the influence of health education has been felt. Quackery is by no means dead and probably never will be, but it takes a far more subtle and clever form of quackery today to fool the people than was the case in the good old days, when politicians, pugilists, society ladies, actors, street-car conductors and other eminent medical authorities endorsed alcoholic tonics which would make the taker adopt an improved outlook upon the world, at least until the alcoholic kick wore off. Today the appeal is more subtle, often by means of the comic strip, but there is a growing attitude of skepticism on the part of well informed people toward all health claims. The "baby-killer" soothing syrup, the tuberculosis cure taken with a spoon, the diphtheria "cure," today find currency only among the ignorant groups in our population. The epilepsy "cure," diabetes nostrums and arthritis remedies still make a powerful appeal to the chronic sufferer who has been

helped but little by the best medical knowledge now available, but even in these fields it is evident that health education is beginning to have its influence.

In this confused picture it seems rather clear to me that we have not had too much health education of the right kind. It is true that we have had a great deal of so-called health education which has been unwise in its conception and imperfect in its execution and, therefore, disappointing in its results. Health educators themselves have been guilty of serious blunders, largely because they were mostly persons who had to function without training, except such as they could gain by trial and error. The remedy seems to be not less health education, but more and better. This depends largely on the physician. It is he who is the custodian of the basic facts on which a program of health education must be based. Because health education so vitally affects his practice, it is necessary that he shall exert his influence upon health education. This he can accomplish in many ways, of which the following are but a few of the most important:

(a) The physician must continue in his private practice as he has always done, to instruct the patient with relation to prevention as well as treatment.

(b) The physician as an individual must be ready to contribute his share to health education through support of and participation in the educational activities of his professional body, either local, State or national.

(c) The medical profession must occupy a prominent place in the community picture in health education, including the utilization of press, radio, rostrum, conference, committee and personal contact.

(d) The medical profession must be ready at all times to offer its advice to lay bodies interesting themselves in health education and to the official community agencies through which health education may reach the public, especially the health department, the schools, the library and recreation agencies.

(e) The medical profession must be prepared to give its aid toward the solution of community health problems, such as water supply, milk supply, sanitation, contagious disease control, health promotion and enlightenment of the public.

Through its active interest in these problems the profession will exert a profound educational influence.

It has often been argued that small medical societies outside the population centers cannot function in these many directions. I do not believe this is necessarily true. I am thinking of the Medical Society of York County, Nebraska, which enlisted the aid of the State Tuberculosis Association, the State Health Department, the State Medical Association, and the State Planning Board and turned out a piece of epidemiological investigation through tuberculosis case finding which brought them a knowledge of the location and identity of tuberculosis cases representing 95 per cent. of the theoretical incidence of tuberculosis, on the basis of the Framingham ratio of nine cases per annual death. The Oconto County Medical Society in northern Wisconsin is proud of the fact that diphtheria immunization and smallpox vaccination are carried on regularly under the auspices of the Society in the doctors' own offices from year to year. Undoubtedly there are numerous other examples which could be cited. However, these two represent medical societies with a small membership practicing in a sparsely settled rural community in which no organized public health service is available, except that from the State Board of Health, which is necessarily both remote and dilute. If these groups of doctors can do it, others can do likewise. There are many helps available from the State Medical Society office, especially from the Educational Committee of the Illinois State Medical Society. Other helps are available from the American Medical Association, which will furnish the following services useful in local programs of health education:

(a) Loan collections of *HYGIEA* clippings on 82 topics, together with proposed lecture outlines to aid physicians in preparing talks for lay audiences.

(b) Enough radio talks ready for broadcasting to keep a county medical society on the air once a week for 16 years.

(c) Pamphlets at nominal prices for use to supplement the doctor's personal instruction to his patients, or in connection with public addresses, radio talks or exhibits.

(d) Exhibits or material which can be worked into exhibits for local use.

(e) *HYGEIA*, The Health Magazine for the doctor's waiting room table, or to be used as a basis for local press releases, radio programs, speeches and numerous purposes.

(f) Consultation and suggestions on special problems.

(g) To the extent that the headquarters' personnel can cover the ground, speakers may be had for local meetings and in Illinois, of course, your State Medical Society Educational Committee has furnished many speakers from among your own number.

There can be no receding from our present position. We have gone beyond the stage of debate as to whether there shall be health education, or not. The public demands it and the public will have it. The public had better have it from qualified sources with high regard for the public interest than from unqualified sources or from self-seekers. What this adds up to is that the medical profession must take a prominent part in health education, in cooperation with all sincere community groups working toward the same objective as that which is expressed in the constitution of the American Medical Association, namely, the betterment of the public health.

BIBLIOGRAPHY

1. Proceedings, American Medical Association, 1847.
2. Index and Digest of the Official Actions of the American Medical Association, Beginning with the year 1904, p. 2.
3. Proceedings, American Medical Association, 1868.
4. Conference on Health Education, New York City, Nov. 8, 9, 1938.
5. Current Comment, Raw Claims for Raw Foods, J. A. M. A. 88: 1434, 1924.

RHEUMATIC FEVER IN CHILDREN: ETIOLOGY

GEORGE L. DRENNAN
JACKSONVILLE, ILL.

Those who are skeptical of medicine, and who question its rank among the sciences, those who glibly assert that the history of medicine contains but a grain of truth in a welter of ignorance and doubt, should examine the old medical manuscripts which have been preserved, and which would make them realize the great strides made since then.

They would also appreciate what prejudice and ignorance had to be overcome to bring medicine to its present status, and however modest that accomplishment may be considered, it is at least on towering heights as compared with the uncertainty and appalling mistakes of earliest practice.

"On a first view of the subject, it would seem that nothing could be more forbidding, or, one might say, more worn out, than a history of rheumatism in particular. It is not so, however, and I venture to hope that researches which constitute the subject of this work will offer some interest and novelty. They will prove, if I am not much deceived, that upon this subject, as well as upon many others, there was something for us to glean after our predecessors; and that it was destined to be submitted to that great law of progress and reform, which animates, fecundates, and governs in medicine as in all other things."

The above paragraph is a quotation from "New Researches on Articular Rheumatism in General, Preliminary Considerations," by Jean Bouilland (1796-1881) published in 1836. I need not add that it is not altogether inappropriate today.

The exact cause of rheumatic infection in children is still not determined, although for many years research in bacteriology, pathology, and practice has been directed toward the isolation of bacteria or virus which will produce the disease. The generally accepted view is that the disease is bacterial in origin but no microorganism has been proved to be responsible. Many facts seem to bear out the view that the disease is an infection and many investigators have isolated microorganisms which they feel to be the specific exciting cause.

Poynton, Payne, Swift, Small, Birkhang, and others cultured streptococci from the blood, valves, joints, pericardial fluid, and pharynx of cases and many claim to have produced in animals myocardial lesions very similar to the Aschoff bodies found in the rheumatic heart. The importance of the hemolytic streptococcus in producing rheumatic infections has recently been advanced by Coburn and Pauli who state the belief that the reactions of the patient to certain well-defined strains of hemolytic streptococci is the underlying cause of the rheumatic infections. However, Wheeler and her associates

using patients from the same vicinity as Coburn and Pauli contradict this view.

The organism isolated by many investigators has usually been a strain of non-hemolytic streptococcus; both green-forming and indifferent types, have been charged with the responsibility of causing the disease. Lichtman found that the non-hemolytic streptococcus could be isolated from six per cent. of a series of patients suffering from nine totally different diseases. It is established that the non-hemolytic streptococcus can be constantly obtained from almost every throat. In view of these facts it would seem that the isolation of various strains of non-hemolytic streptococci from the blood stream of patients with rheumatic infections is merely coincidental, serving as evidence that the most frequent transitory bacterium in the blood of all persons is a non-hemolytic streptococcus.

In an attempt to reconcile these findings some investigators have stated that all types of streptococci are able to produce an allergic reaction in certain persons and that perhaps organisms other than the streptococcus are able to do likewise. According to this school of thought, rheumatic infection is an expression of this allergic reaction.

Several workers abroad, by the use of special technic, have isolated a tuberculosis organism in cases of acute rheumatic infections, but this work has not been confirmed.

Even the vitamins have been advanced as the causative agent. Rinehart was led to believe that rheumatic infection might be the result of vitamin C deficiency plus infection, but other workers could find no clinical evidence to substantiate this hypothesis.

Observation of particles which strongly suggest virus elementary bodies in the exudates obtained from synovial and pericardial cavities has led several English investigators to advance the hypothesis that a virus was the cause of the disease. However, this evidence is indirect and the disease has not been transmitted to experimental animals with this material.

Of significance is the recent work of Friedman, Klein and Rosenblum in which serum originally obtained from patients during the acute phase of rheumatic infection was injected into the same patients during convalescence. They found that after a lag of days, this evoked symptoms and signs suggestive of the original

disease. This would indicate the presence of some substances other than a non-specific serum in the blood of the patients with the acute rheumatic infection which is capable of reproducing signs and symptoms of the disease when the serum of this blood is injected intravenously into the patient from whom it was originally taken.

Accurate knowledge of the natural history of any disease is vital to a true conception of it, its spread, modes of transmission, entrance into the organism and modes of attack. It is obvious that at present there are many gaps in our knowledge of rheumatic infection, but facts are gradually being accumulated and in time we shall certainly know as much of it as we do of other diseases. What we do know is more suggestive than definite.

Since the disease is most common among children of the poorer classes it is not surprising that it has been etiologically associated with other disorders which prevail in the same groups, namely tuberculosis, streptococcic infections and vitamin deficiency diseases. No one has yet succeeded in demonstrating a direct link between these conditions and rheumatic infections.

There are many factors involved in an attempt to explain the fact that the disease is so exclusively one of poverty. Those features which seem to be more important as predisposing conditions are overcrowding, improper or insufficient food, poor clothing, variable temperature in the home, poor sanitation, dampness, lack of sunshine and poor maternal care. Of these possibilities dampness and chilling have been looked upon as of major importance since John Haygarth wrote in 1805: "Exposure to cold and moisture is a principal cause of the acute rheumatism, and many other especially inflammatory diseases. For this reason we cannot be too minute and diligent in our endeavors to investigate the circumstances in which this enemy of mankind produces such injurious effects."

Upper respiratory tract and tonsillar infections, both acute and chronic, have been listed repeatedly since early writings in connection with the etiology of rheumatic infections. The relationship of scarlet fever to the disease has also been the subject of frequent debate. It seems much more logical to consider these pre-

disposing rather than actual causes of the disease.

The age of the onset of a rheumatic infection is not always easy to determine. Where the disease starts as a clear-cut chorea or acute rheumatic polyarthrititis, the date of onset is obvious, but too often the symptoms escape the notice of the parent. Numerous attempts have been made to determine the ages at which the incidence of rheumatic infection is greatest and the various series agree that the peak of incidence is between the ages of five and fifteen. The disease is rare before the age of three, uncommon under five and most common at the age of nine. This would indicate that the first decade of life presents the most dangers for a child as regards the rheumatic infections.

The seasonal and geographic distribution of the disease deserves brief comment. It is to a great degree confined to the countries in the temperate zones. It has been suggested that rain, cold, dampness and sudden variability in temperature tend to increase the incidence of rheumatic infections. Some investigators have reported peak incidence of cases of this disease in the spring and fall months; however, it is not uncommon to encounter the earliest symptoms at any time during the year.

That rheumatic infection in childhood is reflected in cardiac deaths up to the age of 40 and comprises 25 per cent. of these deaths, is accepted. That these figures are sufficient to show that rheumatic infections in childhood constitute a tremendous public health problem is obvious. One has to work with children only a short time to be strongly impressed with the problem of rheumatic infections. The child who is limited in his work and play, retarded in his school work because of long absences presents a pathetic picture. And so the question quickly arises, "what can we do about it?"

SIGNS AND SYMPTOMS OF RHEUMATIC FEVER

KING WOODWARD
ROCKFORD, ILL

In discussing the symptoms of rheumatic fever in childhood we no longer view the subject as an acute inflammatory disease of the

joints, with associated heart damage, but rather as a systemic infection with manifold signs and symptoms which differ markedly from the rheumatic fever seen in adult life.

The degree of severity of these symptoms varies greatly. The fulminating type is marked by high fever, toxic signs, rapid and extensive pancarditis and death in a short time. A second variety is manifested by migratory polyarthrititis, carditis, rheumatic nodules, epistaxis, etc., followed by a quiescent period; then there is a flareup and aggravation of all symptoms leaving permanent destruction in its path and a premature death. The third type which is of greatest importance to the pediatrician is the childhood rheumatic fever ushered in with vague and insidious symptoms and signs. Our early recognition of this phase of rheumatic fever is paramount and is a challenge to us. Prompt and adequate treatment during this phase will prolong many lives. Let us discuss some of these symptoms more in detail.

Fatigue in a child should always make us suspicious. The child who after a series of upper respiratory infections is tired after school, wants to rest, is cranky and unhappy, bears watching.

Fever may be manifest daily for a period of weeks for no apparent reason, not constant nor high, but persistent.

The *Weight* may be stationary and associated with anorexia.

The *Pulse* rate is usually elevated out of proportion to the temperature and is a much better index of infection.

These signs together with a leukocytosis and an increased sedimentation rate may make up the symptom-complex of early rheumatism in childhood. There may be no signs of acute arthritis at this stage of the picture, nor will there always be an audible heart murmur.

We frequently hear and use the term "growing pains" and no doubt all of us have at one time or another associated these symptoms with rheumatic fever. There is, however, a very definite feeling now among some authorities on the subject that the term "growing pains" should not be used in connection with rheumatism. Dr. Shapiro has recently published an article on this subject and as some of you may not be familiar with his work I have had a chart made showing his differential table.

The case with typical joint pains is not difficult to diagnose and I need not elaborate further on this point.

Epistaxis is a frequent symptom of rheumatism and usually occurs during the active stage of this disease.

Pallor is usually present in the rheumatic child, but not necessarily associated with lowered hemoglobin.

Chorea—At the present time there appears to be some controversy as to the exact relationship of chorea and rheumatic fever and I trust that Dr. Gibson or Dr. Elghammer will give us their opinion on this matter. Suffice it to say that chorea is about five times more prevalent in girls, that it may follow an emotional upset and regardless of the controversy to follow chorea is still manifest by purposeless movements.

Rheumatic nodules are an index of activity representing proliferative changes and usually appear in those seriously affected. They are small, hard nodules not particularly tender and usually occur over the elbows, knuckles and wrists. They may persist for some weeks and then disappear as activity subsides.

Abdominal pain is usually present with an existing pericarditis and pericardial friction rub.

Erythemas occur in rheumatic infection principally as erythema marginatum which presents itself as pale red or bluish red ringlets with pale centers, appearing chiefly on the flexor surfaces of the arms and on the chest. The rash may be fleeting or persist for days.

Cardiac Signs—Rheumatic heart disease must be looked upon as part of rheumatic fever and not as a complication and also the most important part of the disease. Rarely does an individual suffering from acute rheumatic fever escape without carditis. Perhaps the first attack may leave no damage, but the subsequent attacks will not deal so kindly with the heart. The earliest sign of carditis may be only an increased pulse rate. There may be no audible murmur or a murmur may occur weeks later after all other signs of acute infection have subsided. A soft systolic blow at the apex is the commonest murmur heard. Frequently with improvement this disappears. Further signs of cardiac involvement have been and will be discussed under pathology and treatment by other members of this panel.

Let me close my part of this discussion by

asking for continued, alert investigation of the child that presents the symptoms of fatigue, persistent low grade fever, elevation of pulse, leukocytosis and increased sedimentation with or without arthritis or further cardiac signs.

TREATMENT OF RHEUMATIC FEVER IN CHILDREN

H. WILLIAM ELGHAMMER, M. D.

CHICAGO

The etiology of rheumatic fever in children being unknown, a discussion of the treatment will necessarily be rather lengthy and in some phases unsatisfactory. When the cause is found, most likely the treatment will be definite. It occurred to me that we might, for the sake of orientation, consider the treatment directed against the systemic phase of this condition and also against local manifestations, giving consideration to certain subheadings, such as prophylactic treatment, active treatment and, when possible, protective treatment.

The various predisposing factors met with in the etiology of rheumatic fever suggest many measures to be considered in the prophylaxis of this infection: attention to clothing, avoidance of chilling and exposure to dampness and cold are of great importance. A well-balanced daily routine in regard to play, work and rest and regularity of meals is very essential. Often children of the preschool age are allowed to dispense with their afternoon rest; many are sent to kindergarten in the afternoon and are occupied with additional work, such as music lessons and dancing. Recreations of a negative form, such as movies and radio are allowed to occupy an excessive portion of the child's daily life.

A child who has a history of rheumatism in the family should be given particular attention. Common colds, pharyngeal infections, tonsillitis and childhood diseases, as we know, may initiate a rheumatic infection. Convalescence from these diseases should be prolonged beyond the ordinary time usually allowed, and one should be particularly on the alert for any early signs of rheumatic fever.

I think we all feel that rheumatic infection has a definite familial tendency and at times there seems to be a strong suggestion of con-

tagiousness. Considering this standpoint, I believe it is advisable to avoid contact with active cases of rheumatic fever.

The over-active nervous child—a rather common clinical entity—who does not respond to the ordinary management of rest and routine, is often found to have a chronic infection of the pharyngeal and upper respiratory tract. Such conditions as repeated colds, otitis media and tonsillitis I think should be given particular attention.

The removal of chronically diseased tonsils and adenoids is not in itself a prevention of rheumatic infection and I think that there are times when the removal of tonsils and adenoids may even do harm to the child. However, if the child presents no systemic infection and if it is in the favorable season of the year, that is early summer, definitely diseased tonsils and adenoids should be removed, from the standpoint of general health and relieving the child of this burden.

We are accustomed to regard a normal gain in weight as being an indication of optimum health; therefore, we should give particular attention to the underweight child. Being underweight in itself increases the hazards of the child in regard to acute rheumatic infection.

Again in the predisposing etiology we must consider climate; it may even be advisable to remove certain types of children to a warmer climate in order to save them from coming down with this infection.

Perhaps the most important therapeutic agent in the active treatment of this condition is absolute rest, which is a large order; this means bodily as well as mental rest and tranquility. This can be accomplished in most cases at home if the parents are informed of the nature of this disease and if the little patient is enlisted and won over to assist the doctor in trying to return him to health. Where we cannot get the cooperation of the parents we may have to resort to hospital or sanitarium care. During the prolonged period of rest that the child needs he soon learns to amuse himself without a great deal of bodily activity. Each case should be studied individually and it is quite astonishing the many ways by which these children can be kept happy and really receive complete rest. Many times in instituting this management it will be of value, in order to gain

the confidence of the parents, to give some sedative temporarily, such as bromide or phenobarbital. The patient should be kept in an evenly warm room and guarded against any possible chilling, since variations in room temperature seem to be particularly inductive of trouble.

A great deal has been said about diet. I think we can learn something from the experiences of the past in the treatment of tuberculosis. A general diet with a moderately proportional carbohydrate intake and the addition of vitamin D in the form of cod liver oil will suffice. Of late a great number of vitamins have been added, but I think we can truthfully say that a well-balanced diet has proven satisfactory. A high carbohydrate diet will induce a sudden increase in weight but not the type of growth that is indicative of resistance.

As to drugs, salicylates in some form or other are most commonly used. Salicylates have a very definite action on fever and pain and may have some direct action on the pathologic process but we cannot definitely state that salicylates are a specific medication for this disease.

The time that is required for this management should be measured in weeks and months rather than days. What is the answer to the question, when can we terminate this strict management? General improvement of the child measured by return of appetite and the child becoming happy and satisfied, decrease in the pulse rate, return of the temperature to normal, a normal proportion between the pulse in the daytime and the pulse when the child is asleep are some of the clinical findings that determine the progress of the disease. During the last seven or eight years I have become convinced that the sedimentation rate of the erythrocytes is a most valuable laboratory test for the determination of the state of activity of the infection. This test is often far more sensitive and reliable than our clinical criteria.

Considering protective treatment, what can be done to protect the child against recurrence? We know that any slight infection of the upper respiratory tract may cause a recurrence. In these patients there seems to be a silent period of about fourteen days between the time of infection and a flare-up or recurrence of the rheumatic process. These recurrent exacerbations have been very well termed "miniature rheumatic fever." While these children have such

trivial infections they should be watched carefully and their rest prolonged. Some clinicians feel that continued salicylate medication affords some protection. This, however, is questionable.

These children should be guarded against contact with infections. Their activity should be increased gradually, carefully guarding against fatigue or overtiredness. An effort should be made to maintain their resistance and it may be advisable in some cases to remove them to a different climate. Repeated examinations of the upper respiratory tract should be made and, if possible, cultures taken to estimate the amount of streptococci present. Some men feel that where hemolytic streptococci are found in excessive amounts, sulfanilamide may be of value.

The secondary anemia which usually is associated with rheumatic infection should receive particular attention.

As to the local manifestations which are numerous, we may limit the discussion to the consideration of chorea and rheumatic carditis. Chorea is more common in girls than in boys. Early recognition and diagnosis are important. I believe that there is a phase of chorea that escapes us frequently, that is the mental prodrome, the incoordination that suggests itself in the lack of memory and lack of concentration. This phase of chorea is often present long before muscular incoordinations make their appearance. Chorea does not present in itself an active phase of the infection; the sedimentation rate is always normal in an uncomplicated case. Chorea without other rheumatic manifestations rarely results in heart involvement.

Absolute rest and mental relaxation are the most important measures in the active treatment of chorea. If you do not get results it is because you are not successful in producing bodily and mental rest.

As to drugs, sedatives in the form of phenobarbital and bromide seem to have definite beneficial action. Salicylates are also commonly employed. Of late we have tried artificial fever treatment by the injection of various vaccines and by drugs, but my impression is that sometimes this treatment renders the child even worse than the chorea. Hydrotherapy in the form of prolonged warm baths or packs has been a great help at the sanitarium in the treatment of chorea. It is possible that fever therapy in

the form of physical agents, such as radio-frequency waves, may prove to be of value. Arsenic was formerly the drug of choice, but I would like to know if it is truly a therapeutic agent or if the seeming improvement is not due to peripheral neuritis and paresis. Arsenic in our experience is not the drug for chorea.

As to the protective phase of chorea, we know that a child recovering from chorea has had a rheumatic infection and, therefore, should be guarded against any possible recurrence. We should be on the alert in these cases because we know they are likely to recur the following spring and any sign of recurrence should be treated by strict active measures.

Concerning rheumatic heart disease it should be emphasized that the heart is always involved in the rheumatic infection to a certain degree. In frank rheumatic heart disease the various signs and symptoms that are produced often attract our attention to the degree that the treatment is directed mainly against the heart and we overlook the systemic nature of the infection.

The prophylaxis of rheumatic heart disease depends upon early recognition of rheumatic infection followed by strict management and prolonged rest, hoping to render the infection inactive as quickly as possible.

A child with rheumatic heart disease should, of course, be kept strictly in bed, in the horizontal position to reduce the work of the heart. Some form of salicylates should be employed to the point of tolerance. The time required for this management does not depend upon the physical findings of the heart itself but more so upon the nature of the infection. The activity of the infection I believe is most important in the determination of the period of time required for the child to remain at rest.

As to the failing or decompensating heart in children with rheumatic heart disease, it is my impression that this most always occurs during activity of the infection. We have rarely seen decompensation from physical means, such as strain or overactivity. Therefore, treatment of a failing heart in a child is mainly that of a very active infection. If this is true, it may explain some of the discouraging results we have had in the use of digitalis in the decompensating heart. It seems that digitalis does not improve the condition while the patient is

in the active stage; on the contrary, the use of digitalis is often followed by sudden death.

The fast beating heart, the frantic heart, can be quieted with application of cold. Ice packs are beneficial. Codein and morphine are indicated to give complete rest and relief.

During the last few years we have been astonished over the good results sometimes obtained from the use of glucose intravenously during the period of decompensation of the heart.

As to the protective treatment of chronic valvular disease, we may state that these children are not endangered by physical activity, *per se*. In other words, these children, because they have had a rheumatic condition and are left with valvular disease, should not be kept invalids. I do not believe that activity in itself is of great harm. The real danger is reinfection and recurrence of the rheumatic infection. These patients going through childhood diseases or any upper respiratory infections, even of trivial type, should be kept in bed and the rest in bed prolonged beyond the silent period of the infection and we should always be on the alert for any signs of recurrence.

In the treatment of any rheumatic manifestation one should always keep the systemic nature of the disease in mind, constantly anticipating its persistent tendency of recurrence.

PATHOLOGY OF RHEUMATIC FEVER

STANLEY GIBSON, M. D.

CHICAGO

Rheumatic fever is an infectious disease of unknown etiology which manifests itself chiefly by symptoms and signs referable to the joints, the central nervous system and the heart. The localization of the rheumatic infection in and about the joints produces the well-recognized fleeting poly-arthritis. Localization of the infection in the brain is generally conceded to be responsible for the manifestations of chorea. Finally, the invasion of the tissues of the heart accounts for the symptoms and signs of heart disease.

Clinical studies would suggest that the pathology of rheumatism is limited chiefly to these

areas. Pathologic investigations, however, show that there are more widespread tissue changes, and that the subcutaneous tissues, blood vessels, lungs and muscles share in the rheumatic invasion.

The most important changes, both grossly and microscopically, are found in the heart. Rheumatic infection in early life is especially likely to result in severe and extensive cardiac damage. The valvular involvement was formerly considered the chief feature of rheumatic heart disease, though it is now well recognized that myocarditis is practically always present, and pericarditis is more frequent than clinical findings would lead us to believe. The mitral valve is practically always involved in rheumatic heart disease. Along the line of closure of the valve are small vegetations composed of fibrin. Throughout the valve cusps and even the chordae tendineae inflammation occurs which eventually results in scarring and deformity of the valve. The aortic valve is involved in perhaps half of the instances, and the tricuspid valve almost as frequently, though its signs are usually overshadowed by those of the mitral involvement. The pulmonary valve usually escapes, or is involved only as a terminal event. In a postmortem study of 73 cases of rheumatic fever at The Children's Memorial Hospital, Denenholz and I¹ found the mitral valve involved in 72, the aortic in 46, the tricuspid in 41, and the pulmonary in 8.

Pericarditis is fibrinous or serofibrinous in character, involving greater or lesser areas, depending upon its severity. The amount of exudate is usually small. Localized or general adhesions between the layers of the pericardium occur in most instances. In severe cases external adhesions may bind the heart to surrounding structures. In our series of cases, pericarditis was found in 62 of the 73 cases. Friedberg and Gross² in a microscopic study of the pericardial changes in rheumatic fever point out that in practically 100 per cent. of cases of rheumatic disease of the heart the pericardium showed evidence of inflammation. In many of these cases there was no obvious gross evidence of pericardial involvement. We know, also, that the myocardium practically always shares the rheumatic invasion. It is thus evident that in practically every case of rheumatic heart disease pancarditis is present.

Read before Section on Pediatrics, Panel Discussion, Illinois State Medical Society, May 3, 1939, Rockford.

There are two prominent features which characterize the minute tissue changes in rheumatic fever, namely, exudation and proliferation. The exudative process is exemplified in the effusion into joint cavities, into the pericardial sac, and into the pleural cavity. The proliferative process is typified in the cellular reaction in the heart muscle and in the subcutaneous nodules. These two processes are not distinct from one another; in fact, both are usually seen at the same time, the preponderance of the one or the other being determined by the nature of the involved tissue and by the stage of evolution or regression of the lesion.

Pathologists have also called attention to a primary injury to connective tissue affecting the collagen bundles, resulting in localized edema or even necrosis. Klinge³ believes this to be the first specific change resulting from rheumatic infection, and that the exudative and proliferative manifestations result from this damage to connective tissue. He has also suggested that the nature of the connective tissue change is such as occurs in allergic states, and some have undertaken to explain the entire pathology of rheumatism on this basis.

The Aschoff body as found in the heart muscle is regarded as the characteristic lesion of rheumatic fever. In this localized formation are found the various pathological changes mentioned above. There is degeneration of connective tissue, together with fibrinous exudation. Surrounding this area or interspersed through it are large cells, often multinuclear, with basophilic cytoplasm. These Aschoff cells are considered the identifying feature of the rheumatic pathology. In addition to these cells, polymorphonuclear leucocytes, lymphocytes and plasma cells are frequently found. Healing occurs through the formation of fibrous tissue.

Although the typical Aschoff body is found most frequently in the myocardium, the other tissues of the heart present comparable lesions. The involvement of the heart valves and of the pericardium is usually more diffuse, rather than revealing the local proliferation which characterizes the reaction in the heart muscle.

Mote, Massell, and Jones⁴ gave an excellent review of the literature of the microscopic study of rheumatic nodules, and describe the pathology as they found it in a number of excised nodules. They believe that many of the dis-

crepancies found in the literature are due to the varying stages in the evolution or regression of the nodules. They have found, similar to the descriptions of the Aschoff nodules in the myocardium, that the lesions are again exudative and proliferative, the first change being apparently an alteration in the structure of collagen with resulting edema formation and deposition of fibrin-like material.

These same authors were able to induce rheumatic nodules in patients with rheumatic fever by injecting the patient's blood into the region of the olecranon process, combined with frictional pressure. Nodules occurred in 90 per cent. of 20 patients with clinical evidence of rheumatic fever. Normal saline in place of blood was also sufficient to produce nodules in a fair percentage of rheumatic patients. These nodules were similar in clinical and microscopic appearance to those which occur spontaneously.

Although there is general agreement as to the essential pathological changes in the rheumatic inflammation, there has been much uncertainty as to the origin and nature of the Aschoff cells. McEwen⁵ utilized scrapings of subcutaneous nodules from patients with rheumatic fever in the effort to throw light on this problem. These scrapings were stained with supravital dyes. The characteristic cells were practically devoid of phagocytic power, and distinctly different from the essential cells of tuberculous and syphilitic lesions. He believed that they probably arose from undifferentiated mesenchymal elements of loose connective tissue.

McEwen⁶ also studied rheumatic exudates from joints, pleurae and pericardial sac, to determine the nature of the cellular content and to determine whether there might be found the typical cells of the rheumatic granuloma, thus enabling one to establish a definite etiologic diagnosis. Supravital stains failed to reveal cells similar to those which he had found in rheumatic nodules. The number of cells in joint fluids examined varied between 800 and 47,000, and the number of cells seemed to be determined largely by the stage and the severity of the arthritis. The cellular content consisted of polymorphonuclear neutrophils, monocytes, and undifferentiated young connective tissue cells. In none of the specimens did the fluid appear distinctly turbid. Non-rheumatic joint exudates obtained from rheumatoid, gonorrheal,

syphilitic and tuberculous arthritis presented a similar cell picture.

Important studies have appeared recently concerning the pulmonary lesions of rheumatic fever. Gouley⁷ has not only stressed the occurrence of rheumatic pneumonopathy, but has emphasized its importance as a possible factor in right heart failure.

He points out that the acute changes in the interstitial tissues of the lung are comparable to those found in the Aschoff nodule in the heart muscle: namely, an initial focal fibrinous necrosis, a later proliferation of macrophages, and the final fibrosis. The subacute stage is characterized by the lung tissue becoming tough and rubberoid in consistency, and by the frequent occurrence of basal atelectasis. He believes that the localized findings at the base of the left lung posteriorly, so often attributed to pericardial or pleural effusion, are due to atelectasis and that this atelectasis results from impaired elasticity of the lung.

In the chronic stage of rheumatic pneumonopathy the lungs are dense in consistency, remaining semi-inflated, and the alveoli stand out rigidly due to interstitial fibrosis.

As a result of such extensive pathological changes in the lungs, it is easy to believe that the pulmonary pathology may be an important factor in the right heart failure, which is so characteristic of the later stages of rheumatic heart disease.

Little need be said of the changes in the brain in chorea, for they are not well understood. Uncomplicated chorea is rarely fatal, so that little opportunity is offered for microscopic study. If the chorea is complicated by acute infection, the question is naturally raised as to whether the brain changes are merely the result of the complicating infection or due to the chorea itself. Microscopic changes suggestive of the rheumatic infection have been described, but there seems to be little agreement among pathologists as to the presence of specific pathology.

Of interest to us as clinicians is the relative frequency of the major rheumatic phenomena, their relationship to one another, and particularly to cardiac involvement. I have, therefore, undertaken a brief summary of 1,068 cases from our files at The Children's Memorial Hospital and at St. Luke's Hospital. Of this group,

459 have had chorea, 650 have had polyarthritis, and 627 have rheumatic heart disease.

Of the 459 children with chorea, 208 had no other evidence of rheumatism. Polyarthritis occurred in 164, and heart disease in 176 (38 per cent.). Nodules were found in 24 instances and pericarditis in 14.

If the 650 children who suffered from polyarthritis, 157 had polyarthritis alone, 164 had chorea, and 420 (65 per cent.) had signs of heart disease. There were 87 children who exhibited rheumatic nodules, and 54 had pericarditis.

It is thus seen that heart disease is distinctly more frequent in conjunction with polyarthritis than with chorea. It is also of interest to note that the incidence of nodules and of pericarditis is much higher in the group with polyarthritis than in the group with chorea. It is well known that both rheumatic nodules and pericarditis are most often seen in the child who is suffering from severe cardiac damage. Hence I think we may safely conclude that not only does the heart suffer in a greater percentage of cases of polyarthritis than of chorea, but also that the heart is more seriously involved.

Of the 627 instances of rheumatic heart disease, it is somewhat surprising to find that 97 gave no history either of joint pains or chorea. This seems to emphasize the fact that the rheumatic infection may skip the joints and the nervous system, and that we should not on that account hesitate to make a diagnosis of rheumatic fever if the signs in the heart are characteristic.

It should be further emphasized that practically all of these children came under observation before they were thirteen years of age. Some have been followed for many years, many have been observed for relatively short lengths of time. The frequent recurrences of rheumatic fever are too well known to require emphasis. Hence we may be sure that both the incidence and the severity of the cardiac lesions in these children will increase as time goes on. Our present figures reveal that almost 60 per cent. of our rheumatic children have cardiac damage. These facts should impress upon our minds the gravity of rheumatic infection in childhood.

BIBLIOGRAPHY

1. Gibson, S., and Denenholz, E. J.: Rheumatic Heart Disease in Childhood. A Clinical and Postmortem Study of 73 Cases. *Jour. of Pediatrics* 9: 505, 1936.

2. Friedberg, C. K., and Gross, S.: Pericardial Lesions in Rheumatic Fever, *Am. Jour. Pathology* 12: 183, 1936.
3. Klinge, Fritz: Die rheumatischen Erkrankungen der Knochen und Gelenke und der Rheumatismus, *Handbuch der speziellen Pathologischen Anatomie*, 1934.
4. Mote, J. R.; Massell, B. F., and Jones, T. D.: The Pathology of Spontaneous and Induced Subcutaneous Nodules in Rheumatic Fever, *Jour. Clinical Investigation* 16: 129, 1937.
5. McEwen, C.: Cytologic Studies on Rheumatic Fever, I. The Characteristic Cell of the Rheumatic Granuloma, *Jour. Exp. Medicine* 55: 745, 1932. II. Cells of Rheumatic Exudates, *Jour. Clinical Investigation* 14: 190, 1935.
7. Gouley, B. A.: The Evolution of the Parenchymal Lung Lesions in Rheumatic Fever and Their Relationship to Mitral Stenosis and Passive Congestion. *Am. Jour. Medical Sciences* 196: 1, 1938.

PANEL DISCUSSION

Dr. Stanley Gibson, Chicago: When this symposium was planned Dr. Black was to have been the leader but he is now acting President of the Board of Health of the City of Chicago and he, therefore, felt that he was unable to undertake the job of being head of the round table. I have asked him to say a few words anyway because there is one phase we have not touched upon at all and that is the matter of prognosis. I hope Dr. Black will discuss that part of the problem.

Dr. Robert Black, Chicago: Somebody talked about nodes. The most common place we find nodes is the aponeurosis in back of the scalp. Schlessinger reports that when you get over twenty nodes you are justified in giving a serious prognosis. I have followed that warning closely and have observed that if we found a great many nodes the mortality was high. I am convinced Schlessinger's observations are true. Where you find a big crop of nodes, you can look for trouble.

The next thing I want to stress is: Let us forget this heart symptom to a great extent; it is there; it is your sign of danger, but if you wait until there is a murmur it is like waiting until there are tubercle bacilli in the sputum. Can we not look upon this as a systemic disease? It is a systemic disease; it is not a local disease; it is not just heart disease. It has a definite syndrome and a definite set of symptoms and many times you should be able to pick out enough of the symptoms to make a diagnosis before you get a heart murmur. You ought to be able to tell the family that it is rheumatic fever without waiting for the murmur.

I spent a little time in Irving-on-the-Hudson, which I think is one of the best cardiac sanatoria in the country. I was rather gratified to find that forty per cent. of their cases have no heart murmur; that they will not take a case here with over one plus enlargement and will not take a case with a double murmur, but they will take cases with a soft systolic blow. Once a week every case in the institution is examined for hemolytic streptococci and, when found, that child is isolated immediately. I was gratified to find that they look on six months as the minimum time to effect an arrest of the disease. There are no visitors allowed during that time. The parents are shut out, as well as everybody else. That gives you some idea of the respect men who are working with rheumatism have for it.

There has been much said against sanitarium treatment. Just last week Dr. Hedley of the U. S. Public Health Department asked if I did not feel that an

investigation as to just how much good comes from sanitarium treatment should be made. I think that is true. It is time that we find out whether our sanitarium treatment is worth while. I know it is not if you use a sanitarium for a dumping place to send a child to die in. So often a sanitarium is looked upon as a place to send a child who is hopelessly ill. It has been the attitude that when the hospital has done all it can do, unload the patient on the sanitarium and let him die there. I think I am taking children into the sanitarium who are too sick. The sanitarium is like a tuberculosis sanitarium; you must take them early. With rheumatism one of the greatest health problems today, the quicker we come around to the fact that early recognition is the only thing that will save us until we find out what is the cause of rheumatism, the better for all concerned. Appropriate rest during that time is the one thing that must be done.

As to the incidence of rheumatism, I have no idea. I know that if it can be done, rheumatism will be a reportable disease in Chicago; it will be a reportable disease for statistical purposes, not for investigation by the Board of Health, to see if we can find out how common it is.

There is only one other way to determine this and that is by going into the schools and examining the children, but that way you get only the heart murmur and I feel that is too late. You should make your diagnosis of rheumatism before the heart murmur appears.

We have found the sedimentation rate very valuable. It has its fallacies but it certainly has proved one of our best guides as to activity. Do not forget, however, that when your child gets a broken compensation many times your sedimentation rate rises very fast and a great many of the children who are getting ready to die will have normal rates.

The recurrence of rheumatism is insidious. There is a little increase in pulse rate, perhaps a little increase in the temperature and an increase in sedimentation rate and, unless you are alert these indefinite symptoms are very easily overlooked.

I should like to stress what Dr. Elghammer said in regard to digitalis and heart stimulants in these cases. My own experience is that it is rather a useless thing to use them. A few years back, following Hoynes' work in diphtheria, I thought glucose might do some good. I tried a ten per cent. solution without result. I gave 25 per cent. and then began to get results. You can give a 50 per cent. solution, 50 to 100 cc. in these children who are decompensated and you may see miraculous results from it. There are very few of my patients who decompensate who do not get glucose. To me it has been the best single medication I have used. Whether it is due to a dehydrating effect of the concentrated solution which starts these patients urinating I do not know.

If there is one message I would like to leave it is this: Rheumatism is one of the greatest health problems in childhood today. Rheumatism is a systemic disease. The heart condition only occurs in 35 to 40 per cent. of primary cases, increasing in frequency with each relapse, and if you wait for the heart condition you

have let the ship go by; you must make the diagnosis beforehand. This is not hard; your symptom-complex is fairly good and up to the present time you will have to look upon mental and physical rest as the best medication we have.

Dr. Maurice Blatt, Chicago: May I ask one question? Was anything said about the allergic manifestations and sensitivity to rheumatic infection having any bearing on the incidence of the disease and its recurrence?

Dr. Drennan: Much has been written but little has been confirmed regarding the association of allergic manifestations and sensitivity to rheumatic infections. The theory has been advanced that the streptococcus, and perhaps other organisms, produce an allergic reaction which may play a part in the production of a rheumatic infection or be the underlying cause of a recurrence. However, we have no good proof that this theory is well grounded.

Dr. Gibson: Dr. Elghammer and Dr. Black spoke about the use of glucose in heart failure. We have not used it much but I think we will try it.

Does this therapy merely prolong life for a short time, or do some of them eventually go out of the hospital in good condition?

Dr. Robert Black, Chicago: What is the ultimate result in patients in whom we use glucose? They are only temporarily better because when a child gets to the stage of the disease where decompensation takes place the disease is so far advanced that a cure is difficult. At the same time my feeling is that I am not justified in withholding anything that might prolong life; I hope that I have not left anything undone. I only give it as a method by which we can make the patient more comfortable for the time being; I have known them to live for a long time afterwards, the same of Dr. Gibson has in his treatment of incisions on the backs of the feet or other methods. As to anything permanent, I do not think that often occurs. We can all remember a few cases which we said were going to die and that are now nineteen to twenty years old and still have terrible hearts. However, I must admit there is nothing permanent about this treatment.

Dr. Gibson: I was pleased at Dr. Elghammer's emphasis upon the general management rather than focusing attention upon heart failure. I think we all have the feeling that when the child comes to heart failure the outlook is bad. I might mention one case where the child had marked edema which we could not touch with diuretics or digitalis, and we made incisions in the feet. That child was very edematous; she lost 35 pounds in three weeks and she remained alive, free from edema for two years and then died. I do think we should try to keep these patients alive and should try to give them some comfort by any means at our disposal.

Dr. King Woodward, Rockford: May I ask if the electrocardiogram offers any aid in an early diagnosis?

Dr. George Eisenberg, Chicago: We have taken electrocardiograms of children more or less as you would take blood counts, and not in serial fashion. We feel

that the electro-cardiogram offers very little in the diagnosis and prognosis of the doubtful case. Recent works on normal electrocardiograms show a marked variation in the QRS complex and T waves some of which formerly were thought to be on a rheumatic basis. For instance, notching of the P wave, broadening of the wave, slurring of the QRS complex were once thought possibly to indicate rheumatic infection. These things can be found in a large enough percentage of normal electrocardiograms to minimize the importance of such changes in the electrocardiogram. Therefore, in a child with a functional murmur, who is anemic and tired, in whom you might suspect rheumatic infection, your electrocardiogram should not lend too much weight in making up your mind as to the conclusion that that child has a rheumatic infection. On the other hand, we have found the electrocardiogram invaluable in picking up a heart block in a child whose rate might not otherwise show it, or in differentiating a sinus rhythm from an auricular fibrillation in a child with a rapid heart, or in picking up a flutter that might otherwise be overlooked. Men who have done serial electrocardiograms attach more significance to the changes found in private practice and in taking just single tracings I doubt very much that one can rely too much upon the changes found.

Question: In a child who is fatigued and has a lowered hemoglobin but a normal sedimentation rate, how early is his sedimentation rate of value in ruling out a rheumatic process?

Dr. Henry E. Irish, Chicago: May I ask how many sedimentation rates you take? Do you depend upon one or a series?

Dr. Elghammer: In answer to the first question, the fact that there is a normal sedimentation rate does not mean that there is no infection; you must repeat the test over a period of time. At the sanitarium the sedimentation rate is repeated once a week and sometimes oftener. It is possible that a child may have early manifestations of a rheumatic phase and be in a latent stage, thus having a normal sedimentation rate, but if the case is followed for some time, the sedimentation rate will be the earliest definite sign of active infection and it will persist longer than any other finding. A negative or normal sedimentation rate does not rule out a possible latent rheumatic infection.

Dr. E. T. McEnery, Chicago: Sometime ago the use of a drug called nervanol was used with glowing results. I wonder what experience these men have had in the use of this drug in chorea? We see children with chorea so severe that they develop paralysis and I wonder if this is due to a peripheral neuritis or a cerebral irritation, because in these cases there is some psychotic distress.

Dr. Elghammer: In regard to nervanol, I believe that the drug sometimes makes the child worse than the chorea; that has been my experience. There is a question whether all cases of chorea are due to rheumatic infection. We have not found that cases of chorea with paresis present any greater difficulty in the treatment than the average case. It is a peculiar thing that cases with paresis seem to run in seasons any years.

Some nine or ten years ago we had a great number of this type. We quite often overlook the changes in symptoms during different seasons and years.

Dr. Henry E. Irish, Chicago: Dr. Gibson mentioned in his discussion the pathology of the lung which is commonly called Bamberger's sign as not being due to pericardial effusion. I am wondering if each case so described had the advantage of roentgenograms.

Dr. Gibson: I think the interpretation of x-ray findings in these cases is very difficult. One must consider the possibility that the shadows are due perhaps to some congestion, due to some degree of cardiac failure. The question always arises as to whether there is some fluid in the pericardial sac or pleural cavity, or pneumonia, or whether one has collapse or compression of the lung. It is only when these patients come to autopsy that anything definite is determined, and even then the pathologist is not always sure as to what has been going on.

If I may, I should like to ask for further discussion on fever therapy.

Dr. Maurice Blatt, Chicago: We have done considerable work in fever therapy in this condition and our results were very satisfactory. We followed our cases for more than a year and found no recurrences and we cut down the number of hospital days considerably. In my opinion there is no question but that hyperpyrexia is of value in the treatment of chorea. One shortens the course of the disease, but the treatment seemed very severe. A number of hospitals are using hyperpyrexia and report satisfactory results.

Dr. J. H. Wallace, Oak Park: I would like to ask some questions and emphasize some points and at the same time inject some skepticism in my comments.

In the introductory remarks I think it was said that there were no pathognomonic findings of rheumatism. I am sure the essayist did not mean to leave out the subcutaneous rheumatic nodule and, perhaps, erythema, circinatum, which some people think are pathognomonic findings.

I would like to disagree with our friend Dr. Black that twenty nodules must necessarily portend a fatal issue. We used to feel the same way but we now feel that whereas it represents a rather violent systemic infection we have seen patients with many nodules who have made a complete recovery, at least from their active infection, and I do not believe it necessarily means a fatal issue within a short time.

I should like to speak of one or two clinical observations. When there is heart damage, at least heart damage that develops with acute polyarthritis, it is likely to come early in the disease. It does not come three or four weeks afterwards; it comes at the onset. When one has a chorea to deal with it is not uncommon to have the chorea subside and in the course of three to six months or longer, without any visible evidence of active infection in the interval, to have the patient come in with a full-fledged mitral stenosis that has developed without our knowing it.

When a child of five or six or seven has had persistent, active rheumatic infections and we have watched him through a stormy period of years, it is not uncommon when the child reaches puberty at fourteen or

fifteen years to see him settle down, get over the active infection and go along very well through adolescence. But when he reaches twenty or twenty-two, he will often break again and show signs of an incompetent heart. We have noticed that often at St. Luke's where we have followed some of these children for as long as fifteen years.

I should like to ask Dr. Elghammer a question. On what basis does he consider chorea a sequel of active infection?

As to the matter of pre-rheumatism, I would like to know how to diagnose it when there is no arthritis, chorea or demonstrable heart disease. I do not know how to single out any given child with repeated upper respiratory tract infections and say he is a pre-rheumatic child.

The sedimentation rate is a most valuable laboratory evidence of rheumatic infection but we are hesitant to rely on it entirely as a specific criterion.

As to digitalis, we can use it effectively in children with chronic auricular fibrillation on a rheumatic basis. When that condition is present they keep on fibrillating until they die. It is not like the auricular fibrillation of degenerative heart disease and certainly digitalis does help them in holding the heart rate down to a reasonable limit so that they can carry on fairly comfortably.

Dr. Gibson: Let me defend myself first of all. I think I said that in the doubtful case we may not be able to make a diagnosis. I believe that the typical rheumatic nodule is pathognomonic of rheumatism and I believe that erythema annulare is pathognomonic of rheumatism. The idea I meant to convey was this: When we do not have those things and are still in doubt, we have no laboratory test to determine the presence of rheumatic infection in the body. I believe that acquired mitral stenosis is pathognomonic of rheumatic infection. There is no other thing that produces the chronic sclerosis in the mitral valve than rheumatic infection and one is entitled to make a diagnosis of rheumatic heart disease in such a case. However, all these signs and findings may be absent when one wants most to know whether rheumatism is present.

As to the twenty nodules Dr. Black mentioned, it would be interesting to know whether he means twenty all at once or in successive groupings. We see some patients who stay in the hospital who have a few nodules and then a few more and some of these patients recover.

Dr. Robert Black: As to the twenty nodules I spoke of, I meant twenty nodules at one time on one child and I still stand by my original assertion that where you find a large grouping on the same child, I do not say that that child will die but you had better be very guarded in your prognosis.

Dr. Elghammer: The main reason we believe that an uncomplicated chorea is not an active state of the disease is that there is present a normal sedimentation rate. We have all seen patients who have had an uncomplicated chorea go home in good condition and then later have definite evidence of a heart lesion. We have followed many of these cases with sedimentation rates over a prolonged period of time and they often

have "miniature rheumatic fevers" following repeated attacks of pharyngitis. I would feel that if a child who has recovered from chorea contracts an upper respiratory infection or scarlet fever he is very apt to develop a true heart lesion. Once a child has had chorea he is a rheumatic and very apt to have a reactivation with any trivial infection that comes along.

Dr. Drennan: Would you explain that on an allergic basis?

Dr. Elghammer: No.

Dr. Gibson: I believe it has been said here today that chorea is not always on a rheumatic basis. I wonder whether anyone has any deep convictions as to what is the cause? There has been much interesting work on that phase of the subject and the debate has been going on for a long time. I feel that until we know more about it than we do now it is a good idea to consider every case of chorea as being due to rheumatism. I think it will be safer for the child.

Dr. George Eisenberg, Chicago: I do not know in your group of cases how many instances of arthritis appeared alone, but Finley had as many apart from any other rheumatic phenomenon as he did chorea. Therefore, if we have a case that is called "pure chorea," why consider it non-rheumatic any more than you would consider arthritis that occurred alone as non-rheumatic? As far back as the nineteenth century observers have noticed that there is an antagonistic action between chorea and arthritis; that is, the chorea never occurs before the arthritis but generally after. We looked over about 125 cases of chorea and found this actually true in all but one or two cases. The chorea came on two to six weeks after the arthritis when the two conditions occurred in the same child. The history was always that the child developed joint pain, was put to bed, would practically recover from the rheumatic fever and then the chorea came on. Whatever this antagonism is I do not know, and I do not believe it has been adequately explained, but if chorea is to occur in a child with joint pains it occurs in a child recovering from the active rheumatic infection rather than going into an active rheumatic state. In the terminal cases of rheumatism that relationship is not present.

I just want to show that anyone who says that chorea is not rheumatic has by far the burden of proof.

Dr. Gibson: I would like to ask one more question of Dr. Elghammer. We talk about the value of the sedimentation rate. When it is normal we think the child is convalescing. I wonder if he has seen any children with a persistently increased sedimentation rate who continued to do well where they have been followed for some time? In other words, are there exceptions to the rule that the sedimentation rate is normal when the infection has ceased.

Dr. Elghammer: We have seen some children in whom there was a persistently increased sedimentation rate when all clinical manifestations had subsided. I can think of one girl who spent a year and a half with us. She went along four or five months with a high sedimentation rate but all clinical findings were in her favor, and then she started a series of manifestations, including decompensation. The sedimentation rate is

not specific for any one disease; there may be some other condition present which may give a high rate aside from rheumatic toxemia, and a mistake in diagnosis is possible.

I want to mention one thing in regard to decompensation of the heart and that is that the first decompensation differs very much from the second or the third. The child may recover from the first decompensation and often from the second, but very rarely from the third.

STUTTERING AS AN EMOTIONAL AND PERSONALITY DISORDER

MEYER SOLOMON, M. D.

CHICAGO

*A proper understanding and solution of the problem of stuttering is of great importance for science, both pure and applied, especially for psychology and psychopathology.

There are many current controversial conceptions of its nature, causation and management. A critical discussion of them cannot here be given. Enumeration and discussion of them has been offered by others.¹

The object of this paper is to present a conception of the origin and development of stuttering based on modern trends in what I believe to be scientific psychology and on clinical findings in stuttering.

THESIS

The thesis of this paper is the following: Stuttering is a specifically conditioned personality, emotive behavior and speech disorder in the struggle for equilibrium during social speaking.

DEFINITIONS

Of the words in the title and thesis, all have, I believe, generally accepted meanings except stuttering, personality and emotive behavior.

1. *Stuttering*: As the term stammering is commonly used with several different meanings (lispings, complete speech block or speech hesitation or speech repetition or their combination) the term stuttering is, in my opinion, preferred for any degree of that special disorder of speech characterized by transient interruptions of the rhythm of speech, resulting in speech block, whether incomplete as in hesitation and repetition, or complete as in temporary inability to produce any sound, or their combination.

From the Department of Nervous and Mental Diseases, Northwestern University Medical School. Elaboration of presidential address before the Chicago Neurological Society, January 20, 1938.

2. *Personality* is here used for the total organization of the individual's behavior reaction tendencies, with emphasis on the persistent behavior reaction tendencies.

3. *Emotive behavior* or *emotion* is used for behavior under excitement, during which there is overactivity of the total animal organism. Others² have referred to excitement or excessive tension as undifferentiated emotion. If preferred, the terms excitement or excessive tension may be used instead of undifferentiated emotion. The undifferentiated emotion of excitement may exist by itself or precede or follow any of the other emotions. When excitement is present, the individual reacts to it in various ways, such as panic, confusion, fear, anger.

Such terms as tension, equilibrium and the like found in the remainder of this discussion, have the usual accepted meanings.

CONCEPTION OF THE PROBLEM OF ADJUSTIVE BEHAVIOR

Stuttering is a type of adjustive behavior.

The study of the why of stuttering is a study in motivational psychology.

Motivation psychology is "the study of all conditions which arouse and regulate the behavior of organisms. The *arousal* of behavior necessarily implies a release of physical energy from the tissues. The *regulation* of behavior includes the control of activity through purposive determinations, as well as the restriction of activity by organic structure."³

Hence the scientific study of motivation falls within the field of mechanics, that is, biomechanics, or the energetics of animal activity, including the origin and regulation of behavior.

Thus the problem of adjustment is really one of human energetics.

TYPES OF ACTIVITIES WITHIN THE HUMAN ORGANISM

Although, like all organisms, the human organism acts as a unit, it has several types of activities which may roughly be classified in accordance with their decreasing levels of tension, as follows:

1. Subjective or so-called mental, psychological or psychic activities, including such activities as thinking, feeling, wishing, deciding. They are accompanied by varying degrees of consciousness or awareness, from the most uncritical, re-

flex, passive or undirected to the most critical, reflective, active or directed.

2. Vocal activities.

3. Postural or gestural activities, also called skeletal, voluntary, projicient, ambulatory, somatic.

4. Visceral activities, also called vegetative, involuntary, autonomic nervous system activities.

5. Physico-chemical activities which are present in all types of bodily activities.

All of these are interrelated and interdependent and changes at one level may influence any or all of the others.

THE HUMAN ORGANISM AND THE ADJUSTMENT PROCESS

The human organism is an energy system constantly capturing, transforming and transmitting energy.⁴

It is in a state of unstable, dynamic moving equilibrium.

Forces or processes arising within it are frequently in conflict with one another and the total human machine is frequently in conflict with external forces or processes.

The result is constant variations in the level of tension with a tendency to disintegration, disequilibrium or disorganization.

This requires constant attempts at resolution, reduction or release of tension and return to integration or equilibrium.

The adjustive process may be regarded as a trap situation⁵ with the following steps:

1. A motive or directed energy.

2. Thwarting, blocking or resistance of external or internal origin.

3. A state of tension.

4. Adjustive attempts by varied responses, with trial and error and eventual success, with ultimate solution.

5. Resolution, release or reduction of tension.

As time goes on, maturation, training and learning take place, with a system of conditioned responses and habits, with gradual extension of the provocative stimuli and varieties of response until well-organized patterns of adjustive behavior are developed.

The condition of equilibrium from moment to moment depends on the momentary total internal situation or condition of the organism and the momentary total external situation or condition of the environment.⁶

As in physics, the final momentary behavior is

the resultant of the total field of forces and motions.⁷

The momentary total internal situation of the human organism depends upon the congenital equipment, stage of maturation, all past experiences and reactions at all levels, and the momentary state of health.

The momentary total external situation includes social (other persons in family, school, neighborhood, church, work, social life) and non-social (temperature, humidity, noise, light, etc.) factors.

EMOTION AND THE STRUGGLE FOR EQUILIBRIUM

As a result of (1) overstimulation or overmotivation, or (2) blocking of any strong motive or impulse, of external or internal origin, there ensues a state of excessive tension or excitement, which is the undifferentiated emotion mentioned above.

The total organism is stirred up from its highest to its lowest level of activity. The whole organism is overactive and disintegration is taking place at its highest level, or, as Janet⁸ would put it, there is a decline of psychological tension. Thus breakdown, disintegration, disequilibrium, disruption or disorganization occurs, probably from decortication or extracortication.⁹

Young¹⁰ has well defined an emotion as "a disintegration of behavior under certain conditions of stress—a symptom of imbalance of motivating conditions within the personality."

Such a situation demands immediate action or solution by resolution of tension and reestablishment of integration or equilibrium.

GENERAL APPLICATION TO SPEECH, INCLUDING STUTTERING

Speech, especially social speech, is the highest type of integrated response of the total human organism.

Social, interpersonal, communicative speaking is a greater strain than non-social, merely expressive speaking.

In social speaking the individual is really in a trap situation.

The adjustment process in social speaking may be described as follows: The main motives in social speaking are mastery (of thinking and speaking) and social approval. Increased tension may occur from overstimulation, external blocking or internal conflict. There is a struggle for adjustment by varied responses of thinking

and speaking, with trial, error and success—spontaneously or by imitation or training.

When, during social speaking, excitement or excessive tension occurs, we have a state of undifferentiated emotion with a feeling of disintegration, disorganization or disequilibrium.

This is a critical or emergency situation demanding immediate action or solution.

There is interruption of a task (that of social speaking) with disorganized attempts at completion with resolution of tension.¹¹ This may terminate in learned maladjustment or persistent non-adjustment.

The main possible types of response are:

1. Nervousness, embarrassment, timidity, or self-consciousness in social speaking situations.
2. Refusal to speak.
3. Strained or strange voice.
4. Stage-fright.
5. Stuttering.

There may be different degrees and qualities of these responses.

In stuttering there is interruption of the rhythm of verbal expression, with manifestations of speech block, either complete with temporary inability to produce any sound, or incomplete with hesitation or repetition of initial sounds, or their combination.

SPECIFIC APPLICATION TO STUTTERING

Here we shall consider first the energetics or dynamics of the first and subsequent moments of stuttering:

a) *Energetics of the first or primary moment of stuttering.* This depends on the momentary total internal and external situations.

The predisposing factors¹² are: (1) an unduly unstable congenital equipment; (2) past experiences, psychological and non-psychological (illness, injury, etc.) which lead to instability; (3) acquired personality traits, especially shyness and timidity; (4) a low degree of maturation, especially in childhood, particularly before the establishment of correct automatic speech habits; (5) perhaps sex, since it is more common in males, for either biological or/and other reasons; (6) the momentary state of health, psychological and non-psychological, especially fatigue and illness.

The precipitating, exciting or disintegrating factors¹³ are: (1) a social speaking situation with (2) overtension or excitement or undiffer-

entiated emotion from any cause or combination of causes which produce overstimulation, external thwarting or internal blocking (conflict). This includes sudden shock or fright, being teased, nagged or ridiculed, fear of being interrupted, being hurried by others in speech, the desire to keep pace with the rapid conversation of others about him, failure of others to listen to what he says or to wait for him to speak, forgetfulness of the words he wishes to say, being forced to speak excessively or to repeat words too difficult for him, any type of child mismanagement; fears of others because of previous mismanagement or of being punished or found out, internal unresolved personal secret mental conflicts with feelings of shame, guilt, embarrassment from any sexual or non-sexual cause, anger, struggle with lisping, bilingualism with language conflict, undue emotional pressure from persistent efforts to force a left-handed child to use the right hand (generally, if not always associated with many other evidences of child mismanagement).

b) *Energetics of subsequent recurrent, secondary moments of stuttering.* The additional factors to be considered here are: The gradual fixation of stuttering by cumulative emotional conditioning and habit formation, with extension of provocative stimuli and types of response, with persistent recurrence of the maladjustment or non-adjustive response as a line of least resistance. Conviction of social speech inadequacy and failure, with fears of speech block, either generalized for social speech situations, or specifically conditioned to certain speech situations, speech sounds, etc.¹⁴

A system or pattern of defensive adjustments, subjective and objective, to new social speaking situations and memories of past experience with failure, and fear of repetition, results in the organization of what may be called a special preparatory set for social speaking situations.¹⁵

Gradual personality transformations¹⁶ occur, such as

- 1) increasingly pronounced suppression of the personality with introversion, withdrawal and concealment;
- 2) overcompensation with overassertion, stubbornness, negativism;
- 3) assumed indifference or neglect—drifting;
- 4) a common sense attitude with constructive

efforts for gradual self-improvement and eventual recovery.

Finally stuttering becomes a vicious circular non-adjustive reaction. Fear of recurrence of stuttering causes stuttering. Anticipation of stuttering causes fear of stuttering.

PHENOMENA OF STUTTERING

As stuttering is an overactive response of the total personality, there are responses at all levels of activity, depending on the stage of maturation of the individual.

a) *Objective phenomena.*¹⁷ These are present in varying degree and quality in the first and recurrent moments of stuttering. They include:

1) Activities in the peripheral speech machinery, mainly disruption of coordination of the oral, laryngeal and respiratory systems, with terminal speech block, either clonic and incomplete as in hesitation and repetition, or tonic and complete as in failure to produce any sound.

2) Skeletal manifestations, with postural, gestural reactions from head to toes.

3) Visceral and autonomic responses, from tachycardia to secretory and excretory changes.

4) Physiochemical upheaval, peripheral and central, including electroencephalographic manifestations.

b) *Subjective, so-called mental, phenomena.* In the first moment of stuttering there seems to be mainly a state of excitement (which may be preceded or followed by other emotions). With recurrent moments the final product is very complex, as has been shown by Van Riper¹⁸ and is summarized herewith under this subheading.

Generalized expectancy occurs whenever the stutterer confronts a conditioned social speech situation, and is often accompanied by a search for speech difficulty and a rehearsal of planned verbal expression.

Specific expectancy occurs when he attempts a specific word. This gives rise to various expectancy devices, such as

1. avoidance (giving up the speech attempt, substituting a different word, etc.).
2. postponement (pausing, repeating preceding words, etc.).
3. initiation or using "starters" (a word, sound or phrase such as "well," etc.; a movement just before the word, etc.).
4. anti-expectancy and disguise, such as using a kind of speech in which no word stands out enough to be feared (a monotone, sing-song

speech, etc.); distraction of attention such as by voluntary movements, visualization of words, breathing or vocalization ritual; achieving confidence, as by humorous or aggressive behavior. 5. preparatory set for release reaction, as given under devices of release immediately to be mentioned.

Finally the speech attempt is made and the so-called primary symptoms of stuttering occur in the form of speech block. Speech block is either complete, with no sound produced, or incomplete, with the initial sound produced and repetition of same with hesitation or inability to advance to the next sound. This may occur with vowels or consonants. There then ensues a struggle to release the speech block. If the individual stopped all further attempts at speaking, there would be no further stuttering. But the stutterer persists in continuing, after stopping first or without stopping at all. In the first instance, he stops temporarily, and immediately follows with retrial, or finishing the rest of the word, or having recourse to avoidance, postponement, initiation and anti-expectancy devices. In the second instance, there are attempts at continuing speech by effortless prolongation, hypertension and timing devices, or recourse to interrupting devices.

Following the whole episode there is a post-spasm reaction, generally a feeling of embarrassment and failure, self-consciousness and confusion, with fear of recurrence, frequently leading to a repetition of stuttering.

EXPLANATION OF SPEECH PUZZLES IN STUTTERING

Stuttering seems to be absent or present in social speaking situations, depending upon the emotional condition and attitude at the moment each individual sound is produced. When inwardly calm, confident and at ease, there is no difficulty. When not so, there is apt to be.

This seems to explain the many puzzles in stuttering, such as those enumerated below, and many others.

It is generally agreed that every stutterer has little or no speech difficulty as a rule under certain situations. Such common situations are enumerated below, with attempts to explain them:

1. when singing, especially in concert, when the melody and words are well known to the individual. During singing the stutterer is more apt to be absorbed in the pleasure of the song

and live in it and be free of speech block and self-observation, unless his interest wanders from the singing to watching the sounds and words, his speech organs and/or other persons.

2. when whistling. This is a less complex activity than speaking, accompanied by less tension and excitement.

3. when whispering, for the same reasons.

4. when absolutely sure that he is alone. Social speaking is a greater strain than non-social speaking. But let the suspicion arise that someone, actual or imagined, is listening or may accidentally overhear, or even occasionally if he speaks to an imaginary audience, then lack of confidence and fear of oncoming recurrence of speech block may at once bring on stuttering.

5. usually when speaking in concert with other people, especially if he feels buried in the mass of other individuals and voices and has a complete sense of security from being overheard or detected by others even if he did fail in speech. This ensures assurance and self-forgetfulness.

6. he can usually repeat a word which previously caused difficulty. This is due to a momentary change in emotional attitude.

7. there is no trouble with consonants at the end of a word, because the task of saying the word is done and no longer a problem.

8. consonants followed by long vowels are usually easier than consonants followed by short vowels, because they are apt to be accompanied by an attitude of more calmness and relaxation.

9. there is generally no stuttering when speaking to animals or those much younger, because those situations permit of less tension, less fear of criticism and more self-confidence.

10. its greater frequency in males, between 2 and 10 to 1, as compared with females, at different age periods.¹⁹ This has never been satisfactorily explained, but it may be due, in addition to possible biological factors, to the more stimulating and exciting activities and conflicts of all sorts which, for various reasons, are usually the lot of males from earliest childhood.

11. stuttering is uncommonly acquired after 15, and 85 per cent. of the cases occur before eight and the second grade.¹⁹ From maturation and learning, more self-confidence has been developed.

12. some children, estimated as about 10 to 15 per cent., spontaneously recover from stutter-

ing before entering school; especially between ages two and four.¹⁹ There are only about one per cent. of stutterers in the total school population. By maturation and learning, increased stability and confidence, especially in social speaking, have taken place.

13. there is an increase of stuttering after the first grade.¹⁹ This is because of increased tension from various causes.

14. momentary release of speech block may follow the use of voluntary muscular movements of the arm, foot, breathing, etc. This is due to distraction and suggestion.

15. speech may be better with voluntary concentration on visual, auditory, or kinesthetic images or a new strange (pitch of) voice. This is also due to distraction and suggestion.

When the object of supreme interest is the task and the individual is completely absorbed in his thoughts and their expression in suitable words, calmly, confidently, without excitement or hurry, without anticipation or fear of speech block in general or in specific emotionally conditioned social speech situations, and without fear of detection by others of his speech difficulty, all is well.

But when speech doubt and uncertainty arise, with anticipation and then fear of speech block in the presence of others, real or imagined, a conflict between stopping and continuing, with disruption, panic and confusion come upon the scene and all is lost. The commotion in the peripheral speech machinery is but an evidence of the central and general commotional state.

ROLE OF DISTURBING MENTAL CONFLICTS

At the onset, any type of disturbing mental conflict that leads to excitement during social speaking may precipitate the first moment of stuttering. This applies also to the recurrent moments.

Unresolved current mental conflicts, of whatever nature, whether originally causally related to the speech disorder or not, may increase the general instability, the tendency to uncontrolled speech hurry and rush, and hence stuttering. Their resolution is important.

Mental conflicts may, of course, flow out of the conditioned emotional attitudes toward bugaboo sounds, syllables, words, situations and persons.

They may be an offshoot of the handicapping

personality transformations which are an end-product.

The memory of the original exciting cause or causes, if the stutterer ever knew it or them clearly or at all (and he frequently if not generally never did), responsible for the first moment of stuttering may, for all practical purposes, be entirely extinguished, perhaps never again possible of resurrection, but the conditioned response of speech block and the individual's reaction thereto may recur, centered about the social speaking difficulty. This is not to deny the value of intensive psychological analysis or psychogenetic personality study, with the goal of reducing unresolved emotional conflicts and aiding readjustment.

One of the strongest wishes of the stutterer, as he himself will tell you, is to speak normally in social relations and to minimize, overcome, avoid and hide his speech defect from detection by others. The views of Alfred Adler on feelings of inferiority and attempts at compensation, often resulting in overcompensation, are here of value.

CONCLUSIONS

Stuttering is a specifically conditioned personality, emotive behavior and speech disorder in the struggle for equilibrium during social speaking.

It is a clinical syndrome.

Many factors may be responsible for the state of emotional excitement at the time of the first moment of stuttering and its recurrence.

In each case a careful consideration of all internal and external factors responsible for its onset and continuation is essential—such as the physical condition, the routine daily program and habits, the personality makeup and problems, the living conditions and personalities in the home, neighborhood, school and workshop. There should be an impartial search for causes of undue pressure during social speaking.

Its treatment should be that of the total personality and not merely of the speech phenomena. Such proper management should be a combination of physical and mental hygiene, physiotherapy, psychotherapy and environmental therapy adapted to the particular patient, with the goal of readjustment. Especially valuable is intensive personality study and reorganization leading to better peace of mind and social adjustment.

Hence the need for psychogenetic personality study.

There are many important problems for research concerning its origin, development, prevention and treatment.

There are many interrelations with many of the most important problems in psychology, psychopathology, personality maladjustments and disorders.

It can be properly understood only by the application of basic scientific principles.

REFERENCES

1. See, for example, a) Bluemel, C. S., *Stammering and Allied Disorders*. New York, The Macmillan Company, 1935; b) Travis, Edward Lee, *Speech Pathology*. New York, D. Appleton & Co., 1931; c) Travis, Edward Lee, *Speech Pathology*, in Chapter 16, in *A Handbook of Child Psychology*, Second Revised Edition, Edited by Carl Murchison. Worcester, Mass., Clark University Press, 1933; d) Fletcher, John Madison. *The Problem of Stuttering*. New York, Longmans, Green & Co., 1938.
2. Among others, see, a) Stratton, George M. *Excitement as an Undifferentiated Emotion*, Chapter 17 in *Feelings and Emotions*. The Wittenberg Symposium. Edited by Martin L. Reymer. Worcester, Mass., Clark University Press, 1928; b) Carr, Harvey A. *The Differentiation of Emotion*, Chapter 19, in same volume as ref 2 a; c) Shaffer, Laurance Frederic. *The Psychology of Adjustment*. New York, Houghton, Mifflin Company, 1936, section on Emotion, pp. 40-53; d) Jones, Mary Cover. *Emotional Development*, Chapter 6, in volume mentioned in ref. 1 c; e) Sherman, Mandel. *The Differentiation of Emotional Responses in Infants*. I. Judgments of Responses from Motion Picture Views and from Actual Observations. *Journal of Comparative Psychology*, 7: pp. 265-284, 1927, and II. The Ability of Observers to Judge the Emotional Characteristics of the Crying of Infants, and the Voice of the Adult, same journal, 7: pp. 335-353, 1927; f) Sherman, Mandel and Sherman, Irene C. *The Process of Human Behavior*. New York: W. W. Norton and Company, Inc., 1929; g) Young, Paul Thomas. *Motivation of Behavior*. New York, John Wiley and Sons, Inc., 1936, Chapter 9, *Emotion and Motivation*.
3. Ref. 2g, p. 43.
4. a) Osborn, Henry Fairfield. *The Origin and Evolution of Life on the Theory of Action, Reaction and Interaction of Energy*. New York, C. Scribner's Sons, 1928; b) Herrick, C. Judson. *The Thinking Machine*. Chicago, the University of Chicago Press, 1929.
5. Developed in ref. 2 c, Chapter V, *Adjustment*.
6. Jennings, Herbert Spencer. *Behavior of Lower Organisms*. New York, The Columbia University Press, 1931.
7. a) Lewin, Kurt. *Environmental Forces*, Chapter 14 in volume mentioned in ref. 1 c; b) Lewin, Kurt. *A Dynamic Theory of Personality*. Translated by Donald K. Adams and Karl E. Zener. New York, McGraw-Hill Book Company, Inc., 1935; c) Wheeler, Raymond Holder, *The Science of Psychology*. New York, Thomas Y. Crowell Company, 1929; d) Lewin, Kurt. *Principles of Topological Psychology*. Translated by Fritz Heider and Grace M. Heider. New York, McGraw-Hill Book Company, Inc., 1936.
8. a) Janet, Pierre. *Psychological Healing*, two volumes. Translated from the French by Eden and Cedar Paul. New York, The Macmillan Company, 1925, see Chapter V, *Definition of Suggestion*, and VI, *Conditions under which Suggestion Occurs*; b) Janet, Pierre. *Principles of Psychotherapy*. Translated by H. M. and E. R. Guthrie. New York, The Macmillan Company, 1924.
9. a) Darrow, Chester W. *Emotion as Relative Functional Decorrelation. The Role of Conflict*. *Psychological Review*, XLII: pp. 566-578, 1935; b) Travis, Edward Lee, ref. 1 b and 1 c; c) Orton, Samuel Torrey. *Reading. Writing and Speech Problems in Children*. New York, W. W. Norton and Company, Inc., 1937.
10. Young, Paul Thomas, ref. 2g, p. 446.
11. Solomon, Meyer. *Stuttering, Emotion and the Struggle for Equilibrium*. *Proceedings of the American Speech Correction Association*, VI: pp. 221-239. Madison, Wis., College Typing Co., 1936.
12. Enumerated, for example, by Travis, Edward Lee, ref. 1 b and 1 c.
13. Such precipitating factors are stressed by different writers, such as, a) Scripture, E. W. *Stuttering, Lispering and Correction of the Speech of the Deaf*. New York, The Macmillan Company, 1923; b) Blanton, Smiley. *Treatment of Stuttering in the Preschool Child*, in *Proceedings* referred to in ref. 11, I: 1931, pp. 122-126; c) Blanton, Smiley and Blanton, Margaret Gray. *For Stutterers*. New York, D. Appleton-Century Company, Inc., 1936; d) Travis, Edward Lee, ref. 1 b and 1 c; e) See various articles by Bluemel, Solomon, Blanton, Travis, Kenyon, Coriat and others in *Proceedings* mentioned in ref. 11, Vol. I to VII, 1931-1937 inclusive.
14. Especially elaborated upon by Bluemel, C. S., ref. 1 a.
15. Van Riper, C. *The Symptomatic Treatment of Stuttering*, in *Proceedings* in ref. 11, pp. 110-120.
16. This aspect is ably discussed by Johnson, Wendell. *The Influence of Stuttering on the Personality*. *University of Iowa Studies in Child Welfare*, Vol. V, No. 5, April 1, 1932. Iowa City, Iowa, published by The University of Iowa.
17. See a) Travis, Edward Lee, ref. 1 b and 1 c; b) Travis, Edward Lee and Knott, John R. *Bilaterally Recorded Brain Potentials from Normal Speakers and Stutterers*. *The Journal of Speech Disorders*, 2: pp. 239-242, 1937; c) Travis, Edward Lee and Malamud, M. *Brain Potentials from Normal Subjects, Stutterers and Schizophrenic Patients*. *American Journal of Psychiatry*, 93: 929-936, 1937.
18. See ref. 15.
19. a) Ref. 1 b and 1 c; b) West, Robert, Kennedy, Lou and Carr, Anna, *The Rehabilitation of Speech*. New York, Harper & Brothers, 1937; c) West, Robert, *Disorders of Speech, Reading and Writing*, Chapter XIV in *Practice of Pediatrics by Various Authors*, Edited by Joseph Brennerman, Hagerstown, Maryland, W. F. Prior Company, Inc., 1937; d) White House Conference on Child Health and Protection. *Report of the Committee on Special classes, Special Education*. New York, D. Appleton-Century Co., 1931.

185 N. Wabash Avenue.

ETIOLOGY AND DIFFERENTIAL DIAGNOSIS OF GASTRIC HEMORRHAGE

M. M. MONTGOMERY, M.D.

CHICAGO

Gastric hemorrhage may be massive, moderate or slight. It may occur once or repeatedly. The clinical picture varies with the extent of the hemorrhage, the etiologic lesion, the predisposing factors, the associated pathology and the stage at which the patient is seen.

Gastric hemorrhage must be differentiated from hemorrhage in the respiratory tract or elsewhere in the gastro-intestinal tract. Blood from the nose, nasopharynx, pharynx, bronchi, lungs or from the esophagus or duodenum may

From the Dept. of Pathology, Cook County Hospital and the Dept. of Medicine, University of Illinois.

Presented before the Joint Meeting of Sections on Surgery, Medicine and Radiology, 99th Annual Meeting, Illinois State Medical Society, Rockford, May 3, 1939.

be vomited or result in melena. Lower intestinal tract lesions must also be considered. In some conditions hemorrhage may be wide spread throughout the gastro-intestinal tract.

Hemorrhage into the gastro-intestinal tract may be roughly divided into three types as represented by the following discussion.

In massive hemorrhage an individual with or without previous symptoms of a gastric lesion, previous hemorrhage or systemic disease, suddenly vomits a large amount of liquid or clotted blood. This may or may not be preceded by nausea or faintness. Unless the stomach is acutely distended vomiting may not occur but later there may be melena. The signs and symptoms of internal hemorrhage, shock, thirst, restlessness, air hunger, pallor and faintness, often followed by loss of consciousness occur. Within a short time the patient may feel better. If there has been no hematemesis the patient may consider the episode a "fainting spell." Usually, within 24 hours there are one to several loose black stools which, if reported, reveal the true nature of the trouble.

In moderate hemorrhage the individual may complain only of tarry stools. However, if these continue, symptoms of anemia such as weakness, tendency to fatigue quickly, shortness of breath, and pallor, plus symptoms of the etiologic lesion, such as pain of the ulcer type appear. These symptoms may precede massive hemorrhage.

Insidious or slight hemorrhage may cause the patient to complain of shortness of breath, general weakness and pallor, especially of the lips and mucous membranes. Melena is not found but the stool test for occult blood is positive.

Variations may occur. Insidious hemorrhage may be followed by moderate or massive hemorrhage. The clinical picture is varied by the etiologic lesion and associated pathology.

In massive hemorrhage with hematemesis, an etiologic lesion causing a rapid loss of blood is expected. Vomiting occurs when the stomach is acutely distended. Peptic ulcer, esophageal varices, ulcerated carcinoma of the stomach or esophagus and slight perforation of an aneurysm into the esophagus are the lesions suspected.

Since 90 per cent. of gastric hemorrhages are from peptic ulcers, the anatomy and pathology

of this lesion will be considered primarily. Other lesions will be considered incidentally.

The arterial supply of the stomach comes from branches of the celiac axis which form the proximal gastric circle and the distal gastric circle.¹ The vessels along the lesser and greater curvature of the stomach lie in the hepatogastric ligament and gastrocolic omentum respectively, at a distance up to 1 cm. or more from the wall. This no doubt accounts for the relative rarity of severe hemorrhage from the large vessels. They must be involved in the inflammatory base of the ulcer by adhesions to be accessible to erosion. These vessels send branches anteriorly and posteriorly over the surface of the stomach. These penetrate the musculature to the submucosa. The duodenum is supplied through branches from the celiac axis and the superior mesenteric artery.

The pyloric wall is composed of thick longitudinal and circular muscles. The submucosa is very firm and is here closely adherent to the mucosa which is smooth and thick. In the fundus the mucosa is loose. During contraction the longitudinal folds along the lesser curvature are stretched and under tension.

The arteries of the submucosa in the pyloric region are practically straight terminal arteries.² Relatively few in number, they anastomose infrequently, are tortuous and subjected to repeated constriction by interlacing muscle bundles. The arteries of the fundus are not terminal and anastomose freely. The supraduodenal vessel to the first part of the duodenum presents little or no anastomosis with neighboring arteries.³ The muscles are thicker and bulkier in the first part of the duodenum. This region is also exposed to damage by the mixed acid food.

Local vascular disturbances are factors in ulcer genesis. Embolic occlusion or thrombosis of the terminal mucosal end arteries along the lesser curvature of the stomach and first part of the duodenum cause subsequent ulcer formation. Atherosclerosis of the vessel wall and syphilis may influence thrombosis. Vascular disturbance of a gastric vessel is the anatomic basis for ulcer formation in the neurogenic theory recently revived by Cushing. Compression of the vessel by spasm of the musculature of the stomach may be a cause. Peptic ulcers fall in two classes, primary and secondary (Jaffe). The primary type is considered a manifestation of a constitutional

condition. Many of these patients, as suggested by Eppinger and Hess, are vagatonics. The secondary type is an ulceration following an erosion, cerebral lesion, trauma, burn or local vascular disturbance.

In a series of 12,000 postmortem examinations at the Cook County Hospital from 1929 to 1938 inclusive there were 61 cases in which death was due primarily to gastric ulcer. A number of these cases were reported by Dr. Portis and Dr. Jaffe. In 27 cases hemorrhage was responsible. These cases are not representative of typical gastric ulcer hemorrhages but they do represent that group which does not survive massive hemorrhages. It includes only two patients under 45 years of age. A white female, aged 23, developed multiple ulcers following a severe burn of the lower abdomen. A white female, aged 42, also presented an ulcerating squamous cell carcinoma of the upper jaw. The age incidence of the remaining cases is given in Table I.

The most common associated pathologic condition was cardiac hypertrophy which was present in 14 of the 27 cases. This group of 14 cases also included five which showed slight valvular changes of the rheumatic type. Four cases presented mural thrombi in the auricles and five presented syphilitic aortitis. These 14 no doubt previously had been hypertensives. Other associated conditions are listed in Table II.

Peptic ulcers and erosions are due to the action of the acid gastric juice on an area of lowered resistance in the gastric or duodenal mucosa. This area may be caused by hemorrhages in the mucosa, emboli, spasm or thrombosis of the terminal vessels.

Erosions are usually due to conditions not primary to the stomach such as severe infectious diseases or bacteremias. They may also be due to intense irritation of the surface by alcohol, highly seasoned foods or bacterially deteriorated foods. Hemorrhage is usually not marked unless there is lessened coagulability of the blood. Erosions are more frequent in the fundus than in the pyloric region. They heal more readily in the fundus since the mucosal folds often cover and protect them as the stomach empties. If the process extends through the mucosa it is an acute ulcer and may become chronic.

Chronic ulcers usually cause the massive

hemorrhages. The margin is indurated and the base may be composed of scar tissue or covered with granulations. A single hemorrhage from a peptic ulcer is seldom fatal. Repeated hemorrhages may be very serious. The mortality in patients with massive gastric ulcer hemorrhage is generally reported as five per cent. This appears to be high.

The duration of bleeding depends on the facility with which an efficient clot forms over the vessel opening. The blood coagulates on the surface at a distance from the open vessel. It adheres to the mucous membrane. A retrograde surface clot forms which gradually extends back to and occludes the bleeding point.⁴ In an individual with normal coagulability of the blood this process is influenced by a number of factors. The arterial pressure or venous pressure at the vessel opening and the size of the vessel influence clot formation.

The blood vessel wall is quite resistant to the action of gastric juice and usually projects above the ulcer base. The exposed vessel may have a defect in the wall in which case it is unable to retract or adequately narrow the lateral defect. One or several bleeding vessel ends may be present in the base. If a segment of thrombosed vessel is completely digested two vessel ends will be present. Loss of the occluding thrombus results in hemorrhage from that vessel. Sclerosis of the vessel wall as found in elderly individuals or induration and scarring of the ulcer base as seen in chronic ulcers interferes with normal retraction and constriction of the vessel. It is held open and severe hemorrhage may ensue.

The adherence of the clot is influenced by the ulcer crater, muscular contraction of the stomach and bodily activity of the patient. The majority of the mass is probably soon torn away. The occluding portion may be dislodged with rise in the blood pressure or it may be digested by the gastric juice with a second hemorrhage.

The small vessels in the neighborhood of the ulcer are frequently congested. They may rupture especially if there is venous stasis, as in cardiac disease.⁵ Bleeding is usually slight. It may continue for some time and cause hematemesis or melena. Changes in the blood may be a factor in continuous bleeding of this type. Many patients treated with alkalies and strict

diet develop a vitamin C deficiency which favors bleeding.

Hemorrhage from small vessels in the granulation tissue covering the ulcer base may result from trauma by coarse or irritating foods and the repetition of conditions which prevent healing.

Peptic ulcer of the duodenum is fundamentally similar to gastric ulcer and is differentiated roentgenologically. The hemorrhaging ulcer is usually located on the posterior wall behind which the pancreaticoduodenal artery and its branches lie. The base of the ulcer may be in the pancreas, in which case the vessels of that organ may be involved.

In this same series of postmortem examinations there were 71 cases in which duodenal ulcer was the primary cause of death. Hemorrhage was responsible in 21 cases. This series showed about the same age incidence as those cases of gastric hemorrhage, the fifth decade leading. Hypertrophy of the heart was associated in 12 cases. Two of these 12 also had syphilitic aortitis. One patient 36 years of age had an associated perigastric abscess following a perforation which had been repaired a short time previously.

There were five cases of jejunal ulcer following gastrojejunostomy. In two of these death was due to hemorrhages. In one case of spontaneous gastrojejunostomy death was also due to hemorrhage. This type of ulcer is prone to hemorrhage as well as perforation. Da Costa gives the incidence as at least 40 per cent. This question is important in considering the type of surgery in the treatment of ulcers with recurrent hemorrhages.

Another group seen frequently are those patients with hypertension who have occasional hematemesis, often severe. They respond rapidly to treatment. Bed rest and improvement of the circulatory system is followed by cessation of hemorrhage. These hemorrhages, similar to epistaxis, are looked upon by some men as a "safety valve" for the hypertensive.

Rupture of esophageal varices is one of the most common causes of hematemesis. Portal cirrhosis, so-called Banti's disease or splenic anemia and thrombosis of the splenic vein are the conditions causing these varices. About 25 per cent. of patients with portal cirrhosis have hemorrhages from varices at one time or another.

In five per cent. of cases of cirrhosis the termination is by hemorrhage. The vascular bed of the liver is reduced and the blood must get from the portal to the systemic system by means of collaterals. One of the chief routes is through the stomach and esophageal veins. Cardiac insufficiency with congestive failure often precipitates a hemorrhage by adding to the obstruction through back pressure in the systemic venous system. In 201 cases of cirrhosis of the liver in the series quoted there were 85 cases with marked esophageal varices. Of these, 28 terminated from hemorrhage. There was one case diagnosed as ruptured varix in which the hemorrhage was from a gastric ulcer. Hemorrhage of this type is usually more exsanguinating than most ulcer hemorrhages and they respond more slowly. This may possibly be due to the liver damage.

Carcinoma of the stomach with ulceration of one of the larger vessels may cause a massive hemorrhage. Vomiting of a small amount of red blood or "coffee ground" material is more common than profuse hematemesis. The ulcerocarcinoma involves vessels as does the benign ulcer. Adenocarcinomas, especially in the region of the pylorus, break down due to poor blood supply, infection and the action of gastric juice. These carcinomas may become excavated and widely eroded in a short time.⁶ Diffuse scirrhous carcinoma and linitis plastica do not tend to hemorrhage to any great degree.

In this series of postmortem examinations there were seven cases in which hemorrhage from a carcinoma was the primary cause of death.

Other lesions causing gastric hemorrhage include acute gastritis previously mentioned with erosions. Corrosive gastritis, due to a corrosive substance may result in focal necrosis with hemorrhage or perforation. Toxic substances may cause diffuse lesions and death. Sulphuric acid, hydrochloric acid, nitric acid, caustic soda and lime are all corrosive in action. However, death is usually due to systemic effects and very seldom directly to hemorrhage.

Chronic follicular gastritis is an inflammatory change in the stomach wall with a tendency to hemorrhage by gastrotaxis which may be marked or slight. Gastrotaxis is a condition in which the mucous membrane is grossly intact but there is profuse hemorrhage from the gastric wall. Parenchymatous hemorrhage of the stomach probably belongs under this heading.

Trauma across the upper abdomen may be followed by hemorrhage especially if there is an ulcer present. Gunshot wounds or stab wounds may cause hemorrhage as may foreign bodies and benign tumors.

The diagnosis of gastric hemorrhage is made by finding blood in the stool or stomach contents and localizing the lesion in the stomach. If one uses all the diagnostic methods available and considers the possibilities the majority of cases of gastro-intestinal hemorrhage can be definitely localized. One may have to wait for a time before subjecting the patient to fluoroscopic examination. Approximately 90 per cent. to 95 per cent. of gastric hemorrhages are from peptic ulcer or erosions. The remainder are from carcinoma with a small percentage due to blood dyscrasias and the rarer causes mentioned.

Blood from the respiratory tract can usually be differentiated from that of hematemesis. Examination of the nose, throat, and chest with a careful history will usually localize the lesion if it is in the respiratory passages.

Gastric ulcer is diagnosed on the history, symptoms, physical findings and course. Previous fluoroscopic diagnosis is helpful. Silent ulcers with hemorrhage must be diagnosed by exclusion, with fluoroscopic examination later.

Carcinoma of the stomach, previously discussed, is absolutely diagnosed by x-ray.

Corrosive gastritis is diagnosed by history of ingestion of a corrosive, burns of the mouth and pharynx and by analysis of the stomach content.

Infectious diseases, as mentioned, including scarlet fever, variola, malaria, yellow fever, cholera, measles, endocarditis or any bacteremia with hemorrhage in the stomach do not usually cause much trouble.

Intracranial lesions, such as tumors, basal meningitis, and cerebral hemorrhage may cause erosions or acute ulcerations with hemorrhage in the lower esophagus or stomach.

Blood dyscrasias, including hemophilia, leukemia and purpura may cause hemorrhage into the stomach, or intestinal tract, skin, joints or any region of the body. An adequate blood examination usually makes the diagnosis although in some cases repeated examinations and observation over several weeks may be necessary.

Scurvy, Hodgkin's lymphogranuloma, malaria, benign tumors, syphilis and tuberculosis are all rare causes of gastric hemorrhage. Chronic

nephritis or uremia may cause gastric ulceration with hemorrhage.

Extensive lesions of the liver with prothrombin and fibrinogen deficiencies may present hemorrhages in the stomach, intestinal tract, skin and mucous membrane.

The differentiation of hemorrhage into other parts of the gastro-intestinal tract may be difficult. Immediately following a hemorrhage it may be impossible to carry out diagnostic procedures without risk to the patient. The general conditions considered previously may cause hemorrhage elsewhere in the gastro-intestinal tract. Ulcer of the duodenum is very similar to ulcer of the stomach. They are differentiated by the x-ray. Hematemesis in half the cases is due to ulcer of the duodenum.

In carcinoma of the esophagus there is usually a history of dysphagia and possibly substernal pain. X-ray findings are characteristic.

Rupture of an aortic aneurysm into the esophagus is usually marked by profuse hemorrhage. Occasionally an aneurysm causes a pressure ulceration of the esophagus and periesophageal tissue with slow oozing into the lumen with resulting hematemesis. Findings are those of an aortic aneurysm. If the aneurysm is small the diagnosis may be difficult. A fatal termination within a few hours is the rule. In 94 cases of aortic aneurysm in the series quoted there were eight which perforated into the esophagus.

The diagnosis of portal cirrhosis is made on a history of alcoholism with the findings of dilated lateral abdominal and chest veins, pectoral alopecia, a small hard liver or a large palpable liver with enlargement of the spleen, hemorrhoids and possibly ascites. Lowering of the blood serum protein and late reversal of the albumen globulin ratio points to cirrhosis. The x-ray findings of esophageal varices are characteristic and the diagnosis is often made by this means. Esophagoscopy is a valuable means of detecting these varices. It should always be used prior to gastroscopy if there is any suspicion of lower esophageal pathology.

Mediastinal tumors with erosion of the aorta and ulceration of the esophagus have been reported. Foreign bodies impacted in the esophagus have eroded the aorta.

Lower intestinal tract lesions may cause melena or occult blood in the stool. Carcinoma of the large intestine, actinomycosis of the

cecum, tuberculosis of the colon, peptic ulceration of Meckel's diverticulum, often seen in children, ulcerative colitis and lesions of the rectum must all be considered in the differential diagnosis.

BIBLIOGRAPHY

1. Robinson, Byron: Gastric Anastomosis, *The Medical Standard* 31: Number 3, 1908.
2. Einhorn, Moses: Anatomical Consideration of the Ulcer Bearing Area, *Surg. Gyne. and Obst.* 50: 416-425, 1930.
3. Wilkie, D. P. D.: The Blood Supply of the Duodenum, *Surg. Gyne. and Obst.* 13: 399, 1911.
4. Wiggers, C. J.: Physiology in Health and Disease, Philadelphia, Lea and Febiger, 695-696, 1934.
5. Eusterman, G. B., and Balfour, D. C.: The Stomach and Duodenum, Philadelphia, W. B. Saunders Company, 756-757, 1936.
6. Ewing, J.: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1928.

TABLE I

Age Incidence—Gastric Ulcer Hemorrhage				
Below 45 years.....	45-50	51-60	61-70	71 to 81
2	3	13	5	4

TABLE II

Age Incidence—Duodenal Ulcer Hemorrhage				
31-40	41-50	51-60	61-70	71-80
2	3	9	5	2

TABLE III

Gastric Ulcer Hemorrhage	
Associated Pathological Conditions	
Hypertensive Heart Disease.....	14
Syphilitic Aortitis	5
Cardiac Valve Deformity	5
Hypertrophy of Prostate.....	4
Cirrhosis of the Liver with Esophageal Varices.....	3
Pulmonary Tuberculosis	3
Chronic Gastritis	2
Coronary Sclerosis	2
Central Nervous System Syphilis.....	1
Red Atrophy of Liver.....	1
Acute Endocarditis	1

RETROAURICULAR FISTULA FOLLOWING MASTOID OPERATIONS. REPORT OF A CASE FOLLOWING RADICAL MASTOIDECTOMY WITH REMARKS ON THE SELECTION OF PROCEDURE

HAROLD V. WADSWORTH, M. D., AND
GEORGE H. WOODRUFF, M. D.

JOLIET

In dealing with defects of the above type if we are able to restore the parts to a condition closely approximating the normal we will in most cases attain a satisfactory result. This statement might well apply to many other defects in other parts of the body.

Over the years many methods have been proposed for closing openings left after mastoid

operations, some of which, while they closed the fistula for the time being, gave no assurance of permanency because they failed to restore a covering approximating the normal in that they did not supply a healthy subcutaneous and periosteal layer for support and nourishment. In the relatively recent literature we have come across several methods which do seem to live up to the requirements; they do supply a healthy subcutaneous and periosteal layer.

A few months ago we were consulted by a young woman with a postauricular opening about 9mm. in diameter leading to a well epithelialized radical cavity. Most of the time the cavity was dry. At times there was a very small amount of mucoid discharge in the middle ear.

The patient had had a running ear for 29 years acquired at the age of two. In 1933 a mastoid operation—presumably a simple mastoid exenteration—was performed, but the discharge continued. In 1934 another mastoid operation, this time a radical, was done and a good result obtained except for the failure of the postauricular opening to completely close. Following this three separate attempts were made to close the opening. After the first attempt at closure (in the words of the patient) an "infection" occurred, with great swelling of the tissues and even some swelling in the throat, causing the patient to be quite sick. Two more attempts, one in 1936 and one in 1937, the nature of which we do not know, were unsuccessful except that the size of the opening was slightly reduced.

When seen by us there was an opening at the center of the mastoid scar about 9mm. in diameter. The cavity was covered everywhere by epithelium which was unbroken over the rim of the opening, thus being continuous with the external skin. The skin immediately about was quite thin and atrophic but a short distance posteriorly there was a good thick subcutaneous layer. Evidently a thorough radical operation had been done and there was nothing in the cavity except a few crusts in the middle-ear.

Confronted by a case of this type, which most of us meet rarely, it seemed only sensible to consult the literature on the subject. We made no attempt to make this study complete but we did try to read the recent articles on the subject written in English as well as to read some of the standard works on otology and operative surgery.

Some of the earlier methods, while they provided both an internal and external lining, absolutely failed to provide a subcutaneous and periosteal layer for nourishment and support. They thus fail to live up to the standard of restoring approximately normal structure. Some

other methods only partially fulfilled the requirements.

Another essential in closing a retroauricular opening is that the skin closure be accomplished without tension.

Perhaps the method most commonly used has been one described in several books on otology. An incision is made in the old scar line down to the bone and a second parallel incision about one inch posterior is also made. The double tongue flap so formed is raised from the bone and sutured to the anterior flap after trimming the edges. This method does attempt to supply a subcutaneous layer but it may do so rather imperfectly if the skin behind the opening is thin and atrophic. Joe Beck has modified the above procedure by turning the skin in immediately about the opening to form an internal lining for the radical cavity. We believe that several of the methods to be described have definite advantages in that they supply an independent subcutaneous-periosteal flap which can be placed directly over the opening.

In our study we came across four rather recent methods which we considered for our case. Two of these methods had been applied by their originators only to fistulas following the simple mastoid operation; one was designed specifically for a fistula following a radical operation and one procedure was stated to be applicable to either type.

METHOD OF STRAATSMA

Complicated technique requiring three operations.

Necessary only for very large openings or, perhaps, in cases in which the tissues are extensively scarred.

METHOD OF ALMOUR

Incision through old scar line circumscribing the opening.

Retract the skin and periosteum forward and backward.

Continue incision upward and forward at an angle of 45 degrees through skin only.

Separate the skin from the fascia over the temporal muscle and cut a flap of muscle with its pedicle anterior and just at upper end of auricle.

Turn muscle flap down and fasten with one catgut suture.

Mobilize skin and close incisions.

METHOD OF COPPS AND MCCORMICK

Incision through old scar line and fistula down to bone.

Horizontal incision from upper end of first for one inch backward down to bone.

Split flap so made into a skin layer and a deeper subcutaneous periosteal layer.

Retract skin and make vertical incision of deep layer only from posterior end of horizontal incision down to bone. Free deep flap so formed from bone and swing it forward over the fistula. One suture to hold it in place.

Mobilize skin flap and close.

A few years ago one of us used a method somewhat like this to close a fistula following a radical mastoid operation. In this case a supplementary skin incision made to facilitate the skin closure was left to heal by granulation.

METHOD OF ASHLEY

Vertical incision in scar line through fistula down to bone.

Second vertical incision one inch back of first down to bone.

Raise tissues from bone and split flap into two layers—superficial skin, and deep subcutaneous periosteal layer.

Detach deep layer at inferior end and swing flap over fistula; one catgut suture.

Mobilize skin by undermining, making third vertical incision if necessary.

Close all incisions with silkwork mattress sutures.

In applying this method to our case we made one addition, in that we turned the skin in around the fistula to help form the inner lining as was done in the old Trautman operation.

Our patient volunteered the information that at each operation previous to ours one of the well known mercurial antiseptics was used in the skin preparation and each time there was a marked inflammatory reaction. She had called the attention of the surgeon to this, but apparently no attention was paid to her statement because the same type of preparation was used in the succeeding operations. After this warning we were careful to keep all mercurial antiseptics away from this patient.

Sometime before, one of us had heard Dr. Muscat remark that he was using sulfanilamide after his plastic operations and that it seemed to be of value in keeping down postoperative swell-

ing. We used sulfanilamide for several days and there was certainly very little swelling and no sign of infection postoperatively.

An interesting side light on this case is that the patient had for some years been subject to seizures during which she lost consciousness. These seizures became less frequent and less severe upon the cessation of the otorrhea and there have been none since the closure of the fistula. We have been told that Dr. Lempert has a method of dealing with these fistulae through the indural route but as we have had no experience with it we will not discuss it at this time.

We believe that nearly all postauricular fistulas will be successfully closed by methods which supply a healthy layer of subcutaneous and periosteal tissue over which the skin wounds are brought and held together without tension.

Of the methods which we have studied, we believe that Ashley's method fills the requirements more adequately and at the same time more simply than the others. It appears to be suited to fistulas following either the simple or the radical mastoid operation.

BIBLIOGRAPHY

Loeb: *Operative Surgery of the Throat, Nose and Ear*, 1: 378-382, 1914.

Kerrison: *Diseases of the Ear*, 4th Edition, 459-462.

Back, J. C.: In Jackson Coate's *The Nose, Throat and Ear and Their Diseases*, 417-418, 1930.

Almour, R.: *A Method for the Repair of Persistent Postauricular Openings*, *Laryngoscope* 40: 799, 1930.

Straatsma, C. R.: *Repair of Postauricular Fistula Following Radical Mastoidectomy*, *Arch. Otolaryng.*, 19: 616-18, 1935.

Ashley, R. E.: *Postauricular Fistula*, *Annals of Otol. Rhin. and Laryng.* 46: 477-487, 1937.

Copps, L. A., and McCormick, G. L.: *Closure of Persistent Postoperative Mastoid Fistula with a Subcutaneous Pedunculated Flap*, *Arch. Otolaryng.* 27: 472, 1938.

McNichols, W. A.: *Prevention of Postauricular Fistula by Periosteal and Subcutaneous Tissue Flaps*, *Annals of Otol. Rhin., and Laryng.* 45: 475-77, 1936.

DISCUSSION

Dr. W. A. McNichols, Dixon: The very rarity of this condition makes it interesting to me, because when we are going along smoothly, to have one of these occur and try to close it by cleaning the wound and pulling the skin backward, before you go into the literature and learn how to do it properly, you are quite impressed by the fact that you have a real condition to combat. I think this is an important paper to get into the literature, as it shows the simplest of all methods of successful termination of a very troublesome case.

The etiology of postauricular fistula is due to failure in radical mastoid operation in not lowering the facial ridge enough to get adequate drainage, and until this is done it will not close. You have in old ones attempts by nature to close it. Then of course there is

poor hygiene and the manner in which the sutures are put in. Several years ago I encountered a group of these postauricular fistulae in the State Hospital, in a low hygiene type of case, and I have since attempted to prevent this by rearranging the tissue that surrounds the mastoid process. These flaps make you bring down the facial ridge, because you cannot set the flap in place until you do this. This condition will become more and more rare due to this man Lempert. The has been in the limelight so much with his hearing saving operations, that whenever you have a patient with a mastoiditis you are going to have better records before doing a radical mastoidectomy. Most of my radical operations have resulted in poorer hearing after operation than before. I believe more modified radical operations are going to be done than ever before because of its hearing conservation.

I wish to thank Doctors Wadsworth and Woodruff for putting this paper before us and getting it into the literature. It will be one more record to give us more moral courage when we have this misfortune in our own practice.

Dr. George Woodruff, Joliet (closing). I would like to mention that in the old double tongue flap method of closing these fistulae, very often the posterior wound was left open and allowed to granulate in. If you can close all skin wounds at the time of operation I think it is preferable. I want to thank Dr. McNichols for his discussion.

THE OBSTETRIC RECTAL EXAMINATION

ARMAND JEAN MAUZEY, A.B., B.Sc., M.D.

CHICAGO

Accurate rectal examination of the contents of the pelvis of the pregnant woman is an important adjunct to the correct management of her labor. In undertaking this procedure there are four objectives to be determined:

1. The station of the presenting part.
2. The dilatation of the cervix.
3. The character of the presenting part.
4. The position of the presenting part.

The rectal examination should be done in the absence of an empty bladder and rectum. The rubber glove is generally used upon the left hand which leaves the other hand free for abdominal palpation. The glove should be clean and not necessarily sterile. The index finger of the left hand is lubricated well and gently inserted into the rectum with the palmar surface up. The finger is directed back and up in an attempt to locate the cervical os and presenting part through the thin recto-vaginal septum. Care must be taken, however, because the septum has been ruptured by too vigorous palpation.

The point representing the ischial spines is used as a basis for determining the station of the presenting part. When the widest diameter of the fetal head, namely the biparietal diameter, has passed the plane of the pelvic inlet or true conjugate the head is said to be engaged. At this point as a rule the tip of the true vertex will be at the level of the ischial spines. Each centimeter at which the vertex rests above the ischial spines is spoken of as either "minus 1, 2, 3, 4, or 5 centimeters." When the tip of the vertex is above the spines it is said to be floating and not engaged. Stations of the presenting part below or past the spines are noted as either "plus 1, 2, 3, 4, or 5 centimeters." When the presenting part is crowning it is referred to as a station of plus 5 centimeters.

It is generally difficult to palpate the ischial spines when the presenting part has descended to a plus 2 station. This is due to the fact that the dome of the vertex takes up most of the available space of the lower pelvis when the presenting part has reached such a station. Experience will make it possible to judge the station of the presenting part in terms of centimeters accurately without actually palpating the spines. Until that stage of confidence is attained familiarity with the anatomical features of the ischial spines may be secured by palpating for them during each gynecological or prenatal examination.

After the station of the presenting part has been determined study of the cervix and character of the presenting part is done. In multipara at the onset of labor the cervical os is from three to four centimeters dilated as a rule. As labor progresses dilatation and effacement of the cervix occur simultaneously. In primipara, however, the os is generally from one to two centimeters dilated early in labor and is completely effaced before dilatation is appreciably marked.

There are three technical points to be kept in mind when the cervix and presenting part are examined to evaluate properly the progress of labor.

1. The examining finger should be directed as far to the back and as far to the front as is possible.

2. Firm steady pressure against the presenting part is necessary with a side to side sweeping motion of the finger.

3. Examination should be done during a uterine contraction as well as when the contraction is gone.

1. When the presenting part is located it is necessary to direct the examining finger as far posteriorly as possible because frequently the cervical os is located toward the hollow of the sacrum. Associated with a posterior cervical os a thinned out anterior lip of the cervix often develops as labor progresses. This may lead to the erroneous impression that the cervix is completely dilated and to subsequent disastrous operative endeavors.

The finger should be directed as far to the anterior of the birth canal as is possible because occasionally the cervical os may be diverted to the front. In this respect the os will be found in close proximity to the under surface of the symphysis. This finding is more common in the primipara than in the multipara.

Not infrequently the anterior lip of the cervix becomes impinged between the presenting part and symphysis. Of a consequence the anterior lip becomes swollen and edematous. The posterior lip thins out and dilatation advances slowly. The progress of the presenting part is brought to a standstill since the edematous anterior lip acts as an obstruction to labor. This thick anterior lip of the cervix may be felt rectally if the examining finger is carried carefully far to the front. There are times when without a vaginal examination this lip may be retracted if gentle firm pressure is exerted against the lip between the presenting part and symphysis thus allowing labor to proceed to a successful conclusion.

2. The palpating finger should be firmly but not roughly pressed against the cervix and presenting part. As palpation occurs the finger is swept from side to side and up and down as it follows the inside edge of the cervix around. When the edge is located at one side or far to the front or posteriorly it may be lifted up and tugged carefully to one side in order to feel the sagittal suture or genital fold. These characters may rest in either the transverse or oblique planes of the lower pelvis depending upon the stage and picture of labor.

When the head engages in an occiput anterior position and is properly flexed the large or anterior fontanel is not felt readily early in labor because this flexion of the head carries the large fontanel toward the sacral prominence out of reach of the examining finger. As the head advances, however, toward the perineum and extension occurs prior to expulsion of the head the

large fontanel is easily interpreted if there is not too much overriding of the cranial bones. If the normal flexion of the head is obstructed as in a face or brow presentation or when the occiput is directed to the posterior, the large fontanel will be correspondingly easier to palpate since extension is then encouraged. In these instances the large fontanel shifts to the front and may be readily palpated toward the symphysis.

The diamond like outline of the anterior fontanel with its four suture tenacles may be distinguished from the posterior fontanel with its three lines of cleavage. Familiarity with the fontanel spaces and sutures may be acquired by palpating the heads of newborn babies. It is not uncommon to find the posterior fontanel exceedingly difficult to feel in the white infant. In the colored fetus the posterior fontanel approximates the anterior in size and, is of a consequence less difficult to palpate but at the same time is more often confused with the anterior fontanel in diagnosis. This greater availability of the posterior fontanel in the colored infant may account for the increased tendency of the head to mold in the Negro.

When a caput succedenum forms it is not easy to determine the station of the head and the character of the fontanels. Location of an ear by vaginal examination will distinguish between an occiput anterior and posterior. It will be remembered that the back of the ear is directed posteriorly.

3. The third necessity is to examine the cervical os and presenting part during a uterine contraction and without one. In primipara there is usually complete effacement of the cervix before dilatation is much in evidence. Due to the thin cervix and concomitant lack of dilatation errors in diagnosis are frequent. If the bag of waters is prominent, during a uterine contraction the sac is forced down and the outline of the os can be felt with comparative ease. If no forewaters are presenting, however, the finger may sweep across the area of the os and miss the correct dilatation entirely. In the absence of a uterine contraction the head or presenting part rises slightly in the birth canal. The cervical edges retract as a result and become prominent enough that the edges may be palpated and the true size of the os determined.

Abnormal presentations other than vertex may be difficult to diagnose rectally. Not uncom-

monly the genital ridge in a frank breech will simulate the sagittal suture. The nose and mouth of a face presentation may be mistaken for the vaginal and anal orifices in a breech. A prolapsed hand often cannot be distinguished from a presenting foot. When there is vaginal bleeding in the last trimester and rectal study reveals a soft mass at the edge of the cervix placenta previa should be considered. A transversely with a shoulder presenting may be misleading and hard to outline rectally. Rupture of the bag of water carries with it the danger of a prolapsed cord. Following such a condition rectal examination should be done at once. If the cord has prolapsed it will be felt as a worm like consistency protruding from the cervical os. If the circulation has not been shut off there will be pulsation through the thin recto-vaginal septum.

Any interpretation of the rectal study should be correlated with general and abdominal findings and with x-ray and vaginal examinations. The rectal study is but a single instrument used in the attempt to arrive at a correct obstetric diagnosis. A vaginal examination is indicated in each instance when successive rectal studies leave the clinician in doubt as to the diagnosis or when operative procedures are contemplated. The rectal technique is valuable chiefly by the fact that frequent careful examinations are possible with comparative immunity from sepsis. This one point should warrant its use in every obstetrical case.

1819 West Polk Street.

CARE OF THE NEW-BORN

RALPH A. LOAR, M. D.

BLOOMINGTON

A discussion of the factors which make for health or disease of the new-born, of necessity, includes events which far antedate the neonatal period. Consequently it is of paramount importance that the future well being of child, as well as the mother, be constantly kept in mind. Not infrequently one is neglected for the other and while this is at times unavoidable the unborn child doesn't always get the consideration which is its right. All of us have heard the desperate words of the frantic husband

or mother of the patient, "Save both if you can doctor, but Mary comes first." Anything which jeopardizes the child without actually benefiting the mother is, to say the least, poor obstetrics.

So much has been written and taught of the necessity of good prenatal care that it is almost inconceivable that any physician, who assumes the responsibility of a given case, would fail to render his patient adequate care. It is not hard to learn what adequate care should be. However, it is easy for a busy practitioner to get into the careless habit of giving only minimum attention to cases, the great majority of which are normal or nearly so. In this connection the financial status of the patient is apt to be a factor. The individual of affluence is likely to cooperate fully but those in very moderate or straightened circumstances are too prone to postpone the first visit to the physician as long as possible and while under the care of their attendant, are likely to lengthen the time between visits, thinking the fee will be proportionately smaller. I think you will all agree that such an impression is false and should be corrected immediately in the minds of such individuals. An early agreement as to fee and payment in whole, or in part during the prenatal period will go a long way towards eliminating one source of worry from the prospective mother, whose peace of mind is so essential, from a psychological as well as physiological viewpoint.

During the prenatal period we must forever be on the lookout for nonobstetrical complications as well as obstetrical, most of which can be handled without complicated diagnostic procedures, but if there is reasonable doubt as to any given condition we should not hesitate to employ consultation to determine the exact diagnosis and proper treatment. Some of the anemias, tuberculosis, cardiac disease, diabetes, thyroid disturbances, pyelitis, gall-bladder and appendiceal involvement, fall in the latter category. Close attention to these conditions as well as obstetrical complications will place the patient in the best possible position to withstand the ordeal of labor and besides give the baby a better chance to go to term and survive the dangerous neonatal period.

Since prematurity is one of the greatest causes of neonatal deaths, every effort should be made to see that pregnancy continues to term, or if

not, the mother should be studied so that if possible the cause of the prematurity should be removed and a subsequent pregnancy be more successful.

Let us next review some of the factors which are inclined to jeopardize the baby during labor. The increased risk of a breech delivery is of course well known and can be avoided in a majority of cases by an external version in the last six weeks of pregnancy. These cases should be checked frequently, however, as there is a tendency in some to change polarity spontaneously and even a transverse position result. One such case came to my attention recently which went into labor, the cord prolapsing, necessitating a manual dilatation of the cervix and breech extraction.

Authorities are pretty well agreed that maternal and neonatal morbidity and mortality largely parallel one another. Operative interference in labor with its increase in maternal dangers must be limited to the strictest indications if this danger is to be removed from the baby. Either too long or too short labors are apt to affect the baby unfavorably. Some of these are unavoidable but we certainly should avoid procedures on our part which might result in either one.

The advocates of painless labor are convinced of the innocuousness of their favorite analgesic and yet there isn't one that at some time or other, hasn't been the cause of a fetal death. The abolishing of the respiratory reflex, makes artificial resuscitation much more frequent with consequent danger of atelectasis and pneumonia. Even though the first stage may be somewhat shortened the expulsive forces are not infrequently insufficient for a spontaneous second stage and an operative delivery is the result. We know that the effect on the respiratory apparatus of the fetus wears off after a time but who can always tell that labor will terminate after this time limit?

One might argue that the added risk of analgesia is justifiable, but should the physician assume that risk? One writer suggests that if the danger was explained to the patient she would be slower in demanding too much relief from pain.

The psychological approach to the pains of childbirth may be one answer to the present

overwhelming demand on the part of the obstetrical patients for painless labor. I have become convinced that a good proportion will tolerate the first stage pains with very little or no analgesia, then with local infiltration of the perineum with or without a little ether, many deliver spontaneously on which formerly I would use forceps.

And how great a satisfaction it is to hear a quick lusty cry in place of the weak whine of a drowsy youngster that has to be watched for some time to make sure it is breathing properly.

I must mention also, as a factor in damaging babies during labor, the all too frequent use of the pituitary preparations to hasten the first or second stage. I feel that I should apologize for even mentioning this reprehensible practice except for the fact that one birth supervisor admitted that she had been called upon to give one of these preparations very frequently, and that "it certainly hurried things along very nicely."

If it is true that, as some writers claim, a large proportion of normal deliveries produce slight intracranial injury how careful we should be not to subject the baby's brain to unnecessary damage by this method. Of course it is just as bad to allow the second stage to last too long and fail to intervene until the long pressure on the higher centers produce an anoxia, the effects of which may only appear in later life in the form of some type of mental deficiency.

Nurses and birth room attendants should also be warned against forcibly preventing the expulsion of the baby until the doctor arrives as the same conditions obtain as in the prolonged second stage, with the forces acting in a different manner.

The possible damage to the baby by quinine is well known, some individuals being hypersensitive. Also the suggestion that nerve deafness may possibly be produced in the baby should be considered as well as the occasional occurrence of tumultuous pains in the mother. Other conditions which may result in intracranial injury are excessive pressure on the head in breech deliveries and a failure to observe one or more of the principles of forceps delivery. Of these I think the more important are the trial traction, the checking of the heart tones to detect cord pressure, a delivery by degrees, releasing the

forceps between pulls and to be sure the occiput has cleared the pubic arch before extension is begun. Manual rotation of an occiput position should, of course, be attempted, preceded by thoroughly preparing the pelvic floor, and version resorted to only in case of inadequate pains, which quite frequently is the result of excessive narcosis. (I might say that in twenty years I have never done a version with an occiput posterior—the only indication—and doubt that I will in the next twenty.)

A very important legacy for the new-born is a healthy mother which requires not only good prenatal care but a minimum of operative intervention during delivery. This will alone prevent many post partum infections which interfere with lactation and require more artificial feeding. The same is true of post partum hemorrhage, much more frequent following operative delivery, but, when occurring, should be immediately compensated for by transfusion if necessary, as by the time the patient has made up her own blood loss, the breasts are useless for all practical purposes.

The most important factors then, in insuring the welfare of the new-born are the prevention of prematurity, fetal asphyxia or anoxemia and intracranial injury and lastly a healthy lactating mother. A close attention to these factors on the part of the obstetrician will result in a fool proof baby which requires almost no attention except the care of natural functions, beyond which the less attention the better. This presupposes that the medical attendant, whether general practitioner or specialist, is sufficiently alert to detect departures from the normal and take appropriate steps as indicated. He should not leave the prelacteal feeding, if any, to the nurse in charge of the nursery or to an unskilled attendant if the patient is in the home. The advantage of beta-lactose-sodium citrate feedings over milk formulas is well known. The belief that too early feedings of foreign protein in producing early, as well as late, disturbances in the baby, is apparently well founded. In cases of suspected cerebral hemorrhage gentleness in handling and nasal catheter feedings are of prime importance.

The question of consultation with the pediatrician in abnormal cases should be settled early, although I feel that often, we, as obstet-

ricians expect too much; that the pediatrician step in to rectify some mistake in our judgment in handling the confinement. In this they are most long suffering and make the best they can of an otherwise bad job.

However, in the normal cases, which far outnumber the rest, I do not feel we should subject the patient to needless expense to repay a professional debt or to dodge our responsibility. The mounting costs of having babies has caused more than one young couple to postpone pregnancy altogether or space them farther apart than they would like, a thought expressed to me recently by a young mother, much to my surprise as she was decidedly in a higher than the average financial status.

Then, too, as I have mentioned previously, the less a baby is handled and visited the better, not only for the baby but also for the entire nursery. Cross infections occur in proportion to the number of individuals with which the baby comes in contact, and the pediatrician of necessity sees more infections peculiar to the young than the obstetrician.

But on the other hand, if we can possibly foresee, due to the character of the delivery or the early actions of the new-born, that consultation is desirable let us not lose valuable time in getting help and advice before it is too late to be of use. The pediatrician cares for as many indigents as the obstetrician and I am sure is as willing to give necessary aid to all who need it.

However, if we do our work well our patients will be benefited, and we won't have to call in our pediatrician friends so often to share the responsibility of our mistakes.

In closing then, I would say, consummate skill and an unerring judgment may be the attainment of a few, but all of us have a threefold obligation: To ourselves, to strive for continued improvement in our work, to the rest of the profession through interchange of ideas and observations and lastly to the public, who trust us to eliminate unnecessary loss of life of mothers and babies.

608 People's Bank Bldg.

DISCUSSION

Dr. O. H. Christ, Danville: This is the day of preventive medicine. Dr. Loar has discussed extensively the prevention of injury and sickness of the new-born. It seems that his paper might well have been titled "Care of the Unborn" instead of "Care of the New-

born." Dr. Loar has discussed the field of obstetric principles very thoroughly. The principles are good and as a rule I agree with them thoroughly as they are accepted by obstetricians.

I want to emphasize the advantage of one fee or one charge for the entire obstetric care. This fee need not and should not be definite. I never give a patient a definite fee when they first come to me or in the course of their treatment. I sometimes give them the minimum fee and explain to them that if their case is normal their fee will probably not be more than this amount. If it is abnormal the fee will probably be increased, but that it will be a reasonable charge and in keeping with services rendered. I believe when a patient is charged for each prenatal call they are inclined to neglect the calls. For this reason the charge should be for the case and the doctor then will give the case the necessary treatment.

There are a few questions which Dr. Loar brings out with which I am not exactly in accord. It seems that he turns his breech presentations from a breech to a cephalic in the last six weeks of pregnancy. In my opinion this is not practical and, in fact, I can only do it in a few of the multiparae who have very thin, lax abdomens. If it is attempted on other than this class of case, it requires an anesthetic and such hard manipulation that premature labor may be induced. While I know that statistics tell us that breech presentation predisposes to increased morbidity in both mother and babe, I personally do not fear the breech case. I believe that in experienced hands the breech presentation is cared for with nearly the same morbidity and mortality as the cephalic. I think that breech cases are many times hurried too much. I believe that delivery is attempted before the cervix is entirely dilated and this long enough to become paralyzed. I have long maintained that complete dilatation is not sufficient. A cervix must have been dilated long enough to have become paralyzed or to have lost its resistance. Then spontaneous expulsion with deep episiotomy and with the head kept well flexed should cause little trouble. If the head meets firm resistance or appears difficult, well applied forceps on the aftercoming head gives the babe and the mother just about the same chance as with cephalic presentation.

Dr. Loar also speaks of the risk of analgesia. I do not consider analgesia a risk either for mother or for child. If used intelligently in experienced hands I maintain that most labors may be made practically painless with perfect safety to both mother and child.

Dr. Loar's recommendations on the proper conduct of labor are good and are accepted. I want to commend him on these good presentations on the prevention of injury to the fetal head. His discussion of the proper use of forceps is very good and I want to commend him on this.

So much for the care of the unborn child. Now as to the care of the new-born: First, I have discontinued the use of spinal puncture for intracranial hemorrhage in the new-born. It may be that I am old fashioned. I agree with the intramuscular injection of whole blood and perfect quiet.

Since we are meeting with the pediatricians we must be modest in any claims in their field. However, if we are to listen to some of the highly classified specialists we will be calling a surgeon to cut and dress the cord and an oculist to treat the eyes. I believe that specialism can be carried too far. In our state, with such a wide variance of conditions, it is hard to form a general opinion as to who should treat the new-born.

Our state ranges, as you know, from the most highly classified and highly specialized staffs of some of the world's best hospitals, down to the most rural communities. While it may be practical and proper in the former case to turn every babe directly to the pediatrician as soon as it is born, I do not believe this is true in the latter case.

I shall speak more especially of the downstate hospitals and the rural communities, for on these I am better informed. In the first place there are few staff cases. They are nearly all considered as private cases even though the fees may be small. It is expected, and rightly so, that the man employed to deliver the babe will care for it at least while in the hospital. In this service the obstetrician is competent and experienced. He sees and cares for many cases. He sees the mother daily and she expects him to have knowledge of her babe and he does. This service is a part of the obstetric service and is paid for in one obstetric fee. If this child varies from the normal or from minor discrepancies—in other words if it becomes a sick child—then the pediatrician should be called and the parents should and would expect to pay for the treatment of their sick babe.

I agree with the essayist in that counsel should be called early and it should be with the most efficient pediatrician. In the rural communities even this counsel is not always available and the general practitioner continues his general practice on the sick babe as well as on the rest of the family.

It should be remembered that a large percentage of all babies are delivered by the general practitioner. To say that all new-borns should be supervised by a specialist is not consistent, when we consider that the art and science of obstetrics is equally specialized. Then I would say, well babies should be supervised by the family physician or the obstetrician. Sick infants should have counsel and that before conditions are serious.

Dr. Henry E. Irish, Chicago: I have been interested in the matter of depression in the new-born because of drugs administered to the mother. I think each man should remember a few things about the dose of morphine given to the mother. Morphine, $\frac{1}{4}$ grain, given to a mother who weighs 150 pounds means one-six-hundredth grain to the pound, and the amount of morphine which will give physiological effects in the infant is one-six-hundredth grain to the pound. By physiologic effects we mean somnolence with contraction of the pupils. This morphine is eliminated in a period of about four hours; there is a little "hang-over" in the infant but in about four hours the somnolence passes off. If you give $\frac{1}{4}$ grain of morphine to a mother and repeat it in an hour or two you nearly

double the physiological dose to the baby. The lethal dose for adults is about eight times greater (McGuigan). How much greater it is for the baby I have never seen published. However, one must remember that a baby is already asleep and if you deepen that slumber you will have more effect upon the baby than the mother who is being stimulated by pain contractions. The somnolent effect of morphine depends somewhat upon the amount of pain stimulus and when that ceases, then we see a patient go into hours of slumber partly due to fatigue and loss of sleep and partly due to the morphine. But this dose, if it is not repeated too often, I am sure will not kill the baby. About the barbiturates, I know it is common to give $\frac{1}{8}$ grain to a baby weighing eight pounds, which we all do in treating them for pylorospasm, etc., and that makes a dose of one-sixty-fourth grain to the pound and this I know will not produce more than somnolence from which a baby will awaken in three or four hours. This is equal to two grains for a woman weighing 128 pounds.

No one knows exactly how much effect barbiturates have in preventing the starting of respiration in the infant, especially when other influences, such as shock and hemorrhage, are depressively operating.

It is for you obstetricians to figure out how much barbiturates you will give, but remember that it is diffusible and the baby will get an amount greater or less, according to the amount you give.

Dr. N. G. Shaw, Evanston: A few years ago I was interested in and saw many cases of asphyxia and cyanosis in the new-born. Sometimes this would come on immediately after birth and sometimes in one or two days. About that time everybody in that general hospital was using nembutal. I hold no brief for or against this drug except this: where it was used indiscriminately we frequently saw babies who either died or had a great deal of difficulty after birth. I think the enthusiasm has been tempered somewhat and that this medication is being used more cautiously. I think that in the same hospital we are seeing much less cyanosis and trouble in the new-born now that some of the analgesics are used more cautiously.

Dr. R. R. Loar, Bloomington: I wish to thank the doctors for discussion about the barbiturates. I believe there is a middle ground that is safe.

TWO YEARS' EXPERIENCE WITH THE AUDIOMETER IN THE SPRING- FIELD, ILL., SCHOOLS

G. KOEHLER, M. D.

SPRINGFIELD, ILL.

Director of Health and Hygiene

It is generally agreed among educators that normal hearing is very essential in the education of the child, consequently much attention is

Presented before the Section on Public Health and Hygiene, 99th Annual Meeting, Illinois State Medical Society, Rockford, May 2, 1939.

given to the detection of hearing deficiencies in school children.

Unfortunately, some of the hearing defects found cannot be remedied when they are discovered but it is hoped that the increased finding of these conditions will stress the necessity of their prevention, and promote the conservation of hearing in young children.

With this objective in view various national organizations interested in the conservation of hearing, viz. American Society for the Hard of Hearing, and the Section on Laryngology, Otol-ogy and Rhinology of the American Medical As-sociation have passed resolutions favoring peri-odic testing acuity of hearing of all school chil-dren by scientifically accurate methods adequate for the detection of even slight degrees of hear-ing loss.

Several instruments are now available for such tests, notably the 4B Audiometer which is the instrument used in the Springfield, Ill., schools.

RESULTS OF AUDIOMETER TESTS

During the past two years 6,570 children in the public and parochial elementary schools in Springfield, above the second grade, were tested with this instrument. The tests showed that 304 or 4.6 per cent. had defective hearing. A loss of six decibels in both ears or nine in one ear were classed as losses of hearing acuity. The number of children tested in each grade and the percentage found to have hearing defects are shown in Table 1.

TABLE 1 RESULTS OF AUDIOMETER TESTS BY GRADES, SPRINGFIELD, ILL., SCHOOLS—1937-39			
Grade	No. Examined	No. Defective	Per cent. Defective
3rd	1,626	77	4.7
4th	1,173	54	4.6
5th and 6th.....	1,709	73	4.3
7th	1,219	47	3.8
<hr/>			
Total in Grades.....	5,727	251	4.4
Unclassified Elementary.	843	53	6.3
<hr/>			
Total Elementary	6,570	304	4.6
9th	1,032	69	6.7
Unclassified High	334	15	4.5
<hr/>			
Total High	1,366	84	6.2
<hr/>			
Grand Total	7,936	388	4.9

Unfortunately, there is no uniformity in the use of the number of decibels considered as an indication of defective hearing. Some workers class a reduction of nine decibels as a hearing defect, on the other extreme any reduction, be-low 0, which is the average normal, is consid-

ered a deficiency. Consequently it is impossible to compare the results reported in various lo-calities.

In the 37,977 hearing tests recently made of school children in Illinois, as a W.P.A. project under the Illinois Society for the Prevention of Blindness, 4,965 or 13.1 per cent. were found to have defective hearings, as measured by their standard.

If the children with a hearing loss as shown by the 4A Audiometer are retested individually with the 2A Audiometer, by which the hearing losses at various tone levels can be accurately tested, an exact determination of the loss of hear-ing acuity can be made; this was done in New York City where the report on over 700,000 pu-pils tested showed the following results:

In the elementary and junior high schools, 3.2 per cent. had impairment in both ears; 4.1 per cent. in the right ear, and 3.5 in the left ear. In 57,200 high school students, the percentages showing impairment of hearing were 1.8, 3.1, and 2.3 respectively.

In our tests of 1,366 students in the Spring-field high school, which included all those par-ticipating in competitive athletics, 84 or 6.2 per cent. were found to have defective hearing, as measured by our standard.

COMPARISON OF AUDIOMETER TESTS WITH OTHER METHODS

During the five years preceding the inaugura-tion of audiometer tests in the Springfield schools the school nurses tested the hearing of 14,554 children with the modulated voice test, and found 83 or 0.6 per cent. with defective hear-ing. This is in contrast with 4.9 per cent. found by the audiometer tests made during the past two years.

Newhart¹ reports that the Minnesota public health nurses reported only 2.2 per cent. of defective hearing cases when tested by the old methods as compared with 8 per cent. found in Minneapolis by the audiometer test, when first introduced.

RETESTING WITH THE AUDIOMETER

It is the universal practice to retest children with the audiometer who show a hearing loss by the initial test. This practice was followed in all our cases. The principal reasons why children who fail on the first test pass on the second are inability to take dictation with the ear phones.

This is especially true of the lower grades. Another reason is the possible interference by extraneous noises which is always a potent factor and should be eliminated in passing final judgment on the results of the tests. The inability of the child to comprehend the method of recording what he hears as is observed in children with a low I. Q. also must be taken into consideration. The classroom teacher can help a lot in the proper classification of the latter.

There is another factor that deserves consideration in passing final judgment on the hard of hearing cases found in these tests, which applies not only to the audiometer tests but to all hearing tests, and that is the possibility of the hearing deficiency found being due to some acute conditions from which the child recovers rather rapidly, such as an acute cold, sore throat or influenza-like infection as occurred in our schools last winter.

With the view of determining the frequency of this factor 55 children who were found to have hearing deficiencies by audiometer tests made last year were retested this year. In 28 or 51 per cent. of these children no hearing defects were found in this retest. Of these, about one-third had no treatment for the ear condition in the interim. It is admitted that the total number retested is too small for forming definite conclusions. But nevertheless the results of the retests made after one year tend to show that a certain per cent. of the hearing deficiencies found are evanescent and are recovered from spontaneously.

DISCUSSION

Dr. Arlington Ailes, LaSalle: I would like to ask where pathological changes begin in this matter of testing the hearing. We notice in our athletic teams that some fellow can jump 18 feet, another one can jump 22 feet, another can jump five feet high and another six feet high. I am wondering where the standard is in this hearing test, where you can say "this is pathologic." For instance, it seems for practical purposes if a child can hear a low-spoken voice at a distance of twenty feet, he will get along in the world just as well as the individual who can hear a much lower tone at the same distance, just so he comes within the practical application of his needs. I am just wondering what sort of standard they are going to go by to say, this hearing is abnormal. If he has practical hearing he is all right. Maybe he is perfectly normal, just like the individual who has a Roman nose and another a Grecian—you cannot change either; one is normal for one and another is normal for the other. In our schools we find considerable dif-

ficulty with the young children who do not seem to comprehend, and also the disturbance of noises. We rate the defects as slight deafness and marked deafness. I do not believe the essayist brought out slight and marked deafness. We have tried to work out a formula whereby the one who is doing the testing would evaluate the amount of noise and rate them according to the amount of noise, but that did not work out. That is, if the child was being tested where there was a considerable amount of noise, he would have to be given much more leeway than if it were absolutely quiet, but this plan did not work out very well and it was abandoned. It is a matter of where on the scale you are going to rate a person as normal or abnormal, because normal hearing apparently differs with different people.

Dr. A. J. Levy, Chicago: As between the children of the lower grades and the upper grades, I would like to know whether there was a greater loss of acuity among the children in the upper grades or the lower grades, or it is about the same?

Dr. C. M. Eberhart, Highland (who read the paper): Dr. Levy, I think it would be best to refer you to the table that accompanied this paper. I think, if you refer to the table, you will find that the hearing defects in the higher grades approximate six per cent. whereas in the lower grades it runs around four per cent. I can't explain that difference.

BIBLIOGRAPHY

1. Newhart, Horace: Hearing Problems in Education, Jour. A. M. A. 109: 839, 1937.

INTRACTABLE PEPTIC ULCER

C. H. DRENCKHAHN, M. D.

Carle Memorial Hospital

URBANA, ILLINOIS

Intractable peptic ulcers may be defined as those ulcers which actively recur, obstruct, bleed or heal slowly. They are, therefore, the complicated, simple peptic ulcers. It has been estimated that from ten per cent. to 20 per cent. of simple duodenal ulcers become complicated. About half of complicated ulcers come to surgery for treatment. The Lahey Clinic reported that in 3,000 cases of duodenal ulcer, seven per cent. were operated upon. At the Crile Clinic in similar cases five per cent. were surgical. Why should a simple peptic ulcer become intractable? The answer is that there has been failure to control abnormal gastric acidity or motility, or both. The aggressive factors overwhelm the defense mechanism. This has been shown both experimentally by Mann and his coworkers and clinically by numerous observers. There is a more practical and com-

mon reason for simple ulcers becoming intractable. Improper instructions on the part of the physician may be the reason. On the other hand, it may be due to lack of cooperation on the part of patient. The end-result in either case is similar, inasmuch as it allows the simple ulcer to become indurated, extensive and obstructive.

Let us come back to the first factor in the evolution of a simple ulcer to an intractable ulcer, that is, mismanagement of the simple ulcer case when first seen. Proper initial management of an ulcer will prevent formation of intractable ulcer in some cases. It is certainly, therefore, a necessary approach to the treatment of simple ulcers. In any chronic disease, such as diabetes mellitus, pernicious anemia, myxedema and others, we do not hesitate in being frank. An effort is made to see that the patient has a workable understanding of his disease. On the other hand, with dyspeptics, it is very often true that they are dismissed with a few cursory remarks about eating smooth food and taking a powder after meals. Many times the diagnosis is not proven. The patient leaves the office with insufficient understanding of his illness and insufficient treatment; the evolution from a simple ulcer to an intractable ulcer has begun. With laboratory facilities within the reach of most of us, it seems logical that we should insist on proving or disproving our clinical impression before entering into a discussion with the patient. Most of the time a fluroscopy is sufficient. At other times such additional information as gastric analysis with histamine as a stimulant, gastroscopy and spot films are necessary. After the diagnosis of ulcer is proven, at least 45 minutes should be spent with the patient in discussion of his condition. The location, the recurring nature of the illness, what he is to expect in the future, the causes of the disease and its therapy should all be presented. For this purpose it is best to draw up an outline and enumerate all of these points.

If it is kept in mind that a benign ulcer will heal providing gastric acids and gastric motility are controlled, the proper regime will be easy. There have been numerous treatments suggested. The simplest treatment in the end seems to be the best. The expensive and tedious regimes are soon only partially followed by the patient, leaving him in a vulnerable position for

development of intractable ulcer. A treatment that we have followed with good results in simple ulcers with crater formation, consists of milk and cream, oz. three, every hour from 7 a. m. to 8 p. m. Powders are given at 9 a. m., 10:30 a. m., 1 p. m., 3:30 p. m., 7 p. m., and 9:30 p. m. In addition, to overcome abnormal motility, we use nembutal gr. $\frac{1}{2}$ and atropine gr. $\frac{1}{150}$, three times a day at 7:30 a. m., 11:30 a. m., and 5:30 p. m. This procedure is maintained for five days. The patient is then given small amounts of soft food three times a day in addition to the above schedule. This procedure is maintained for another five days, at the end of which time, he is allowed an ambulatory ulcer diet with intermeal feedings at 10 a. m., and 3 p. m. The powder is then diminished to one dram, one hour after meals and fifteen minutes before retiring. The nembutal and atropine are maintained for a period of two months, the powder for a period of eight months and the diet for a period of one year. He is told that there is no permanent cure without a change in his inherent makeup, also, that new ulcers form and in order to prevent them from becoming chronic, he must recognize the symptoms. He is admonished to resume the old schedule of treatment as soon as warning symptoms show themselves. In addition, all focal infections are eliminated and every effort is made to reëducate the individual in his philosophy of living, in order that his aggressive personality may be changed.

On the above schedule about ten per cent. of the simple ulcers will become chronic, that is the ulcer recurs too often. Oddly enough when it does recur it generally recurs in its original form. If it was ushered in with a hemorrhage, with pain or with obstruction, it generally recurs that way. Why this is so we do not know. Most of these ulcer cases are logical candidates for surgical intervention. The excessive gastric acids and abnormal motility could not be controlled medically. For the young or middle aged adult with high acids and pepsin the operation of choice at the present time is subtotal gastrectomy. The gastro-enterostomy is done only in those cases of advanced age or poor risk otherwise. These cases do not always submit to surgery and they can be carried along medically but at an economic loss to them.

The treatment for those cases of intractable ulcer with hemorrhage has already been outlined in this symposium by Dr. Brunschwig. For those cases who obstruct, we use the following method of treatment. For the first day nembutal gr. $\frac{3}{4}$, and atropine gr. $\frac{1}{150}$ are given three times a day by rectum. Gastric lavage is done at 8 a. m., 12 noon, 4 p. m. and 8 p. m., using three per cent. sodium bicarbonate solution. Nothing is given by mouth except sips of water. A total of 3,000 cc. of Ringer's solution and five per cent. glucose in saline are given in divided doses parenterally. On the second day the patient is allowed 100 cc. feedings of liquid or soft carbohydrate food every two hours from 7 a. m. until 9 p. m. Nembutal gr. $\frac{1}{2}$ and atropine gr. $\frac{1}{150}$ are given three times a day by mouth. The gastric lavage is maintained as before. The parenteral injection is reduced in amount to 1,500 cc. This is maintained for one day. The amounts of feedings are then increased to 200 cc. at a time. The gastric lavage is reduced to once or twice a day when the retention is found to be 400 cc. or under and, at that time, the parenteral injections can be discontinued. In five to ten days, the patient is able to handle an "ambulatory" type of ulcer diet with intermeal feedings. For antacid powder, we have used Takazyme (Parke-Davis & Co.), a preparation containing calcium carbonate, magnesium carbonate and bismuth subcarbonate. In our experience this preparation has been entirely satisfactory.

The medical treatment of gastric ulcers is similar to that of the duodenal ulcers. It differs in that gastric ulcers must be followed more closely and for a longer period of time. In general, the prepyloric ulcers and the ulcers along the greater curvature, are more apt to be malignant than those in the mid portion of the lesser curvature. The presence of high acids does not, of course, rule out malignancy, but it does cause one to strongly suspect a benign lesion. The size of the ulcer is not always indicative of benignity or malignancy but, in general, the larger the ulcer the more chances for malignancy to be present. Those gastric ulcers which persist after three or four weeks of adequate medical treatment, should be explored surgically and depending on the condition of the patient,

a subtotal gastrectomy or an excision and gastroenterostomy should be done.

CONCLUSION

Fewer ulcers, I believe, would become intractable if we made every effort to positively diagnose the condition and clearly outline to the patient a treatment which would control gastric acids and gastric motility. This should not be too difficult to follow. At the same time, an effort should be made to have him understand the tremendous influence his personality plays in the disease, and helpful suggestions should be made toward correction of that factor. Focal infections should be removed. Various medical treatments can be tried but, in general, where one fails the other will also. Surgery should be used only where adequate medical treatment fails.

TUBERCULOSIS IN CHILDREN. CONSIDERING CONTACT IN THE DOMESTIC SERVANT

E. T. McENERY, M. D.

CHICAGO

The problem of diagnosis of tuberculosis in children has been discussed from many angles. The question of contacts has always been an important one. Many times the contacts have been outside the immediate family and because of this they present difficulties which can only be aided by the medical profession. These contacts should include: grandparents, aunts, governesses, maids and schoolteachers. Let me cite a few typical examples of children developing tuberculosis from such contacts.

Case 1. Child four years old cared for by nursemaid for a period of one year. The maid had a slight cough; this was thought to be a benign affair, until an acute illness brought her under the care of her own physician. X-ray of the chest made and a definite pulmonary process discovered. Sputum showed positive tuberculosis. Child was skin tested and reacted 4 plus; x-ray taken at this time showed enlarged glands and some infiltration. Plates taken during a three-year period showed this to be calcified at this date. Parents negative.

Case 2. Boy, age two years, one of four children. Under nursemaid's care for six months. The maid, following an attack of "flu," did not recover her former health and developed a cough, loss in weight and daily temperature. X-ray of the chest showed a pul-

monary process at the left apex. Sputum positive. The four children were skin tested. The two older ones were negative, the two younger ones positive. X-rays taken on all four showed only the youngest to have some infiltration at both hila.

Case 3. Girl aged two being cared for by nursemaid, the kind that is very good with children. Child began to run temperature of unexplained origin, became irritable, lost her appetite. Tuberculin test showed 4 plus. X-ray of the chest showed extensive involvement. It was then noted that the maid had a cough. On being x-rayed, chest showed advanced pulmonary involvement and a positive sputum. The child continued to run a temperature for several months. She is now six years old with complete absence of physical findings and the last x-ray shows no activity. At the time the condition was discovered in the maid and the child, an x-ray was taken of the parents and showed no pathology.

Case 4. Boy aged 15, well developed and active in athletics. In August he developed a cold which seemed to hang on longer than usual. He lost five pounds in weight. No cough, night sweats or any pain in his chest. In October he began to spit up blood at night. Examination of his chest at this time did not reveal any findings. X-ray showed extensive involvement. Sputum bloody and teeming with tubercle bacilli. Investigation of the family disclosed the fact that the grandfather and father had pulmonary lesions. Four other children in the family had positive tuberculin reactions and all showed childhood tuberculosis on the x-ray.

Case 5. Child aged two brought in because older sister had died of tubercular meningitis. Child had always been well. Physical findings: some suppression of breath sounds at the right apex. Positive tuberculin test. On checking for contact the mother was found to be positive and an aunt the original source of infection.

These and countless more cases well known to all physicians occur frequently and still we fail to make proper plans to safeguard our children against such exposure.

Meyers reports the case of a school teacher whose husband died of tuberculosis. She contracted the disease from him and was under treatment for a period in a sanitarium. Her condition improved and she was restored to reasonably good health. The opportunity to return to her former profession as a teacher presented itself but there was need for a physical examination before the position could be obtained. She went to a physician who knew nothing of her previous condition. Physical examination was negative; no tuberculin test was made nor x-ray of the chest taken. She passed a perfect physical examination and presented herself before her class, to die a year later of tuberculosis. How

many school children were exposed to this contact no one knows.

As a result of a recent tuberculosis survey of the adults employed in the schools of Minneapolis, including 3,600 teachers and janitors, eight cases of open tuberculosis were uncovered. Routine examination of school teachers is just as important as that of the children.

Recently through the public press the question of venereal infection has been brought before the lay person. A great deal of interest has been aroused. This same plan should be followed with reference to tuberculosis.

The literature on the health situation of the domestic servant is very scant but items of importance appear from time to time in the press. One of these items was in a Washington, D. C., paper: "Tuberculosis is one of the District's outstanding health problems and about 60 per cent. of all Negro female deaths from this disease were among individuals classified as domestic servants, indicating contacts with white households."

In recent correspondence with Mrs. Moreland of Washington, D. C., who has been studying this problem for some time, she feels that since the public has shown such a keen interest in the matter of health with reference to venereal infection, this interest should carry over into the field of tuberculosis.

In some cities legislation has been passed regarding the health of the domestic servant. Dallas, Texas, requires all household help to have routine Wassermann tests. Last year 5,000 were examined and 32 per cent. found positive. No provision is made for tuberculosis examination.

In North Carolina, a bill was recently passed by the General Assembly requiring all domestic help to have a health certificate in which is certified by a physician that the individual is free from all contagious infection or communicable diseases and showing the non-existence of any venereal infection which might be transmitted. This is also to include a report concerning the presence of tuberculosis in the infective state.

In Newark, New Jersey, an ordinance requires domestic help to be free from venereal disease and tuberculosis.

These places have compulsory requirements for examination of domestics and they have claims to show that the servants have everything

to gain and nothing to lose by being examined. They also claim it is a public health measure and is in line with the national campaign for control of syphilis.

In New Rochelle, New York, where such legislation was attempted, the opponents to enforced examination claimed such was class legislation and on this ground even questioned its constitutionality.

Englewood, New Jersey, in attempting to follow the lead of Newark met with many difficulties and the ordinance was rescinded.

In Knoxville, Tennessee, periodic medical examination of domestic servants is being carried out in a sane and satisfactory way without compulsion. The Health Department in that city realizes it is a desirable procedure and encourages examinations. It issues Health Cards, good for six months, to domestics who present evidence that they have been given a satisfactory examination by a physician. The employment agencies there, backed by the demands of the public, are of the greatest assistance in encouraging domestics to be examined and to keep up their Health Cards. In one year 1,200 examinations have been done. Although this is not as many as might have been made under the compulsory system, emphasis is placed on the quality and need for the examination rather than the number. It is notable that it has accomplished a great deal without creating ill feeling and resentment.

To rule out tuberculosis it is absolutely necessary to have a roentgenogram of the chest, because frequently the physical examination fails to reveal what the x-ray examination definitely proves. It has long been found to be a quick and accurate method of diagnosing such disease.

It was with this idea in mind that this subject was brought before you today to acquaint you with some of the facts, and what has been done in other localities. We as medical men should lead in this crusade, not with legislation and compulsory examination, but with education of the lay-person by medical men in our communities. It should not be fostered by lay-organizations which take the control of the situation out of medical hands. This program of education can be accomplished by bringing the question of examination of domestics into the homes of our patients' families. It can also be brought before P. T. A. meetings, business organizations,

women's clubs, and countless other gatherings. All people are interested in the problem of health and it should begin right in their own homes. To encourage this periodic examination the other members of the family should respond to the appeal for the same examination. If such is done the servant seeing the attitude of the parents will be only too willing to enter into the same plan.

Health examination of the domestic would become a general procedure were it not for two reasons. Maids are hard to get and the suggestion for her to have an examination may turn her from the door to someone else who is not so "fussy." Secondly, but of no less importance, is the expense involved in the examination.

Cooperation of the county medical society, roentgenologists and physicians is required to get results from such a plan. This plan is all important in bringing the message before the public but it is more important to determine the cost of such examinations. The cost must be reasonable. In New York the cost of a chest x-ray has been placed at \$3.00; the physical examination and laboratory work between \$3.00 and \$5.00; semi-annual check-ups \$3.00. Servants, if employed, should pay for this examination. They should receive an extra compensation as long as their Health Card is up to date, namely \$1.00 a month more. This protects the employer from loss in case a maid leaves shortly after an employer has paid for the examination. It also is an inducement to the maid to keep up with the examinations.

The domestic in the home is many times closer to the child than the parent. These contacts are the constant ones, not the passing and occasional source of infection. It is good health insurance to bring this message to our patients' homes. And in doing so we are guiding our own national campaign for health and preventive medicine.

DISCUSSION

Dr. E. P. Halley, Decatur: This strikes me as a very timely extension of the tuberculosis problem, and I am mighty glad to hear Dr. McEnery's approach to the extension of control of tuberculosis in childhood to include the domestic.

In our part of the state we are particularly conscious of the school teacher problem. Dr. Lindberg has been very successful in enforcing full surveys of the school children. He had the experience of finding "hot-spots" (relatively speaking) in existence in some of the country schools and was able to demonstrate to the community and to the little group that patronized

these schools that it was time the teacher was brought into this routine and that all applicants for school teachers should have chest films. They, of course, provide these at their own expense and, at Dr. Lindberg's request, we do this at a special rate. The films are then sent to him for review.

In connection with the health examination, I think that Dr. McEnergy might emphasize more strongly the advantages of chest x-ray films, because, after all, an early chest case is seldom diagnosed by physical examination particularly at the time when the patient is still well enough to carry on with active employment.

I sincerely hope that this phase of tuberculosis control can be extended. The important thing, of course, is to think of it, and if the profession is not made conscious of it, we are not going to solve it.

Thank you, Doctor McEnergy.

PSYCHOSES WITH PERNICIOUS ANEMIA

GEORGE A. WILTRAKIS, M. D., F. A. C. S.*

ANTHONY V. PARTIPILO, M.D., F.A.C.S.†
CHICAGO

Discussions of the symptomatology of pernicious anemia should include, not only the blood changes, the digestive disorders and neurological findings, but also the associated mental aberrations. Personality changes and psychotic manifestations are frequently omitted or forgotten. Osler,¹ in his description of pernicious anemia, in his textbook of medicine states, "As the disease progresses, there may be great depression, sometimes delusions, but mental symptoms, as a rule, are not marked."

The incident of mental symptoms can be determined from the literature on this subject. Woltman,² in a series of 1,498 cases of this disease, observed "lesser mental changes" in 35.2 per cent., while Osgood,³ in 1935, reported 40 per cent with "mild mental changes." The symptoms consist of indolence, apathy, irritability, slight confusion and depression. These slight mental manifestations are first seen by the general practitioner and in the anemia clinics and should be recognized.

The frequency of more marked mental aberrations or psychoses varies with the various authors.

Presented May 2, 1939, at the Sectional Meeting of the Physicians' Association of the Department of Public Welfare, of the State of Illinois, at the Annual Meeting of the Illinois State Medical Society at Rockford.

Chicago State Hospital Staff; formerly of

*Elgin State Hospital Staff; Loyola University, School of Medicine.

†Consultant Elgin State Hospital; Loyola University, School of Medicine.

Young,⁴ reviewed 515 cases of pernicious anemia treated in the Peter Bent Brigham Hospital and found 4.5 per cent. to be psychotic; Riley,⁵ in a study of 264 cases observed psychosis in 2.6 per cent.; Woltman,² reported 4 per cent. in a series of 1,498 pernicious anemia patients; Reed,⁶ noted 7.8 per cent.; and Herman, Most and Jolliffe,⁷ in a group of 255, reported the much higher figure of 15.7 per cent. From the literature, it appears that the frequency of psychosis in pernicious anemia is, more properly, between four and seven per cent.

During the period from 1931 to 1938, the authors observed twenty-four cases of pernicious anemia among the mental patients at the Elgin State Hospital. The mental classification of these patients, their symptomatology and prognosis will be discussed and the cases subdivided on an etiological basis. The twenty-four cases detected form an incidence of 0.18 of one per cent. of the 13,023 new admissions to the Elgin State Hospital in this eight-year period. Bowman,⁸ in a study of new admissions to the Boston Psychopathic Hospital, noted twenty-two cases out of 26,000 admissions during a fourteen-year period, or an incidence of 0.08 of one per cent.

The following chart in group (A) lists the mental diagnoses, according to the institutional records, of the twenty-four patients with pernicious anemia.

MENTAL CLASSIFICATIONS OF PERNICIOUS ANEMIA CASES

Diagnosis	Group A	Group B
Psychosis with Pernicious Anemia.....	9	9
Pernicious Anemia Without Psychosis.....	1	0
Paranoid Dementia Praecox.....	5	1
Paranoid State	2	2
Psychosis with Cerebral Arteriosclerosis.....	3	2
Manic-Depressive, Depressed	2	1
Involutional Melancholia	1	1
Chronic Alcoholism with Deterioration.....	1	0
Total	24	16

(Group A lists the 24 patients with pernicious anemia; Group B lists 16 of these 24 cases in whom pernicious anemia was considered the cause of the psychosis).

cious anemia. It will be noted that nine were diagnosed as psychosis with somatic disease, pernicious anemia. Seven had paranoid symptom-complexes, five being paranoid dementia praecox and two paranoid state. Three were classified psychosis with cerebral arteriosclerosis.

In some of these cases, the pernicious anemia was considered an incidental finding or a complicating disease developing in a mental patient, just as tuberculosis, diabetes or appendicitis

might develop in a psychotic individual. A time relationship should be present between the onset of mental symptoms and the establishment of a diagnosis of the anemia. Neurological manifestations have been observed prior to changes of the blood in pernicious anemia patients. Likewise, mental changes can antecede the blood findings, but, after a very prolonged interval, it is very doubtful if it should be considered as a causative agent. For example, in some of these patients the anemia was discovered from five to thirteen years after the onset of psychosis. One would not be justified in stating, in such cases, that the blood disease was the etiological factor. A careful study was made of the patients' histories and social service records to determine if a relationship existed between the pernicious anemia and the psychosis. The authors excluded eight of the twenty-four cases leaving a total of sixteen, in whom the anemia seemed definitely related to the mental changes. The remainder of the paper will deal with this group.

In twelve of these sixteen patients the anemia was noted prior to the onset of mental symptoms and in the remaining four within a maximum period of one year after the onset of psychosis. In group (B) of the chart, is the mental classification of these patients according to their institutional records. These diagnoses were established shortly after admission on the basis of their reaction pattern. Nine were grouped under the heading of psychosis with pernicious anemia and three had paranoid symptom-complexes. The ages varied between 34 and 66 with an average age of 51 for the group. Seven were females and nine were males. (All of the pernicious anemia patients were of the white race.)

The psychosis of pernicious anemia is not characterized by any specific form of mental behavior, yet, according to the literature and in the cases observed, certain mental symptoms predominate. A marked irritability is frequently present and paranoid states, confused states and depressions are often noted. Undoubtedly the prepsychotic personality plays a considerable role in the reaction pattern. In some of the older patients senile changes modify the picture. Prominent among these symptoms is a marked irritability and uncooperativeness. The adjectives frequently used in literature in describing their behavior are irritable, stubborn, peevish,

surly, obstinate, disagreeable, faultfinding, cantankerous and refractory. They are never satiated and are a problem in institutional care. In nine of the sixteen patients irritability was a pronounced symptom. (Irritability was also present to a marked degree in three of the eight cases in whom pernicious anemia was not considered the primary cause. The anemia modified the psychotic picture.) An abstract of one of the cases more clearly demonstrates this feature. Many of the descriptive terms are taken directly from her hospital record.

Case I. Roxana C. A 58-year old, married white female was diagnosed a case of pernicious anemia in 1926 and was hospitalized in six different hospitals from 1928 to 1931. Because of her "violent temper and incorrigibility" she was discharged from many of the hospitals. Her husband found her to be "obstinate, demanding and difficult to satisfy."

Upon admission to Elgin State Hospital in October, 1931, she was, "irritable, arrogant, quarrelsome and paranoid." Neurological findings were pinpoint pupils, absent patellar reflexes, positive right Babinski, diminished tactile and vibratory sense. Laboratory test revealed an achlorhydria, with a red blood count of 2,100,000, a hemoglobin of 65 per cent. and a negative Wassermann reaction. A diagnosis of psychosis with somatic disease, pernicious anemia, was made, with a neurological classification of subacute combined sclerosis. Under liver therapy her blood count returned to normal but she continued "irritable, supercilious and paranoid." There was no mental improvement in spite of prolonged treatment. She died fourteen months after admission of an acute coronary thrombosis.

Paranoid ideation or delusions are frequently noted in patients with pernicious anemia. In some cases, the paresthesias of the upper and lower extremities, the numbness and tingling of the hands and legs, together with the associated weakness, are misinterpreted by the confused mind of an anemia patient and form the basis of the paranoid ideas. In nine of the sixteen cases, paranoid delusions were prominent. The following case belongs to this group.

Case II. Elizabeth M. was an obese 49-year old married female. Her mother died of pernicious anemia. In March, 1930, this patient entered a sanitarium because of nervousness and paresthesias of her extremities. The blood count was normal. Two months later, in April, 1930, she complained of marked weakness of her extremities and expressed paranoid delusions. The red blood count was down to 2,400,000 with a hemoglobin of 65 per cent. Under ventriculin she improved physically, the blood count returned to normal and psychotic symptoms disappeared for several months. During November, 1930, patient again became paranoid, depressed, expressed auditory hallucinations and numerous delusions regarding her extremities. She

re-entered a private sanitarium. Under treatment she gradually improved, and was discharged in April, 1931, in a fairly good mental state.

Three months later, in June, 1931, she was committed to the Elgin State Hospital. Examination revealed a rebellious, resentful individual complaining of weakness of her extremities and expressing ideas of poisoning and infidelity. Neurologically the patellar reflexes were absent. The red blood count was 4,130,000, with a hemoglobin of 95 per cent. and a negative Wassermann reaction. Mentally she was classified as paranoid state. Anti-anemia therapy was not instituted. In March, 1932, the red blood count dropped to 1,600,000 and a hemoglobin to 61 per cent. Under liver therapy the blood picture returned to normal, the irritability gradually disappeared but some of her persecutory ideas persisted. She made a good institutional adjustment. The liver therapy was continued until the fall of 1936 when she was transferred to another institution. Her paranoid delusions remain but are less prominent.

This case presents the paranoid attitude observed in these patients. The onset of mental symptoms was with the onset of neurological changes associated with pernicious anemia. A temporary mental remission and a mental improvement occurred under liver therapy.

Confusion is the third prominent feature noted. This symptom was pronounced in six of the sixteen cases. The literature has reported confusion with a delirium similar to that seen in toxic states, with disorientation, excitement and active hallucinations. This toxic delirium was not noted in this group although some of the patients had red blood counts as low as 900,000. Possibly, these cases are observed in the anemia clinics and private hospitals and never reach a mental hospital. The confusion noted was of the type observed in the organic psychosis, a restlessness and a disorientation associated with a memory defect. The very active auditory and visual hallucinations of toxic states were not seen. The ages of these patients were 44 to 64. It is interesting to note that several cases of this group became more disturbed and more confused as their blood count approached normal.

Depressive features have been reported in literature and was very pronounced in two patients of this group of sixteen.

Thus, the symptomatology of the psychosis associated with pernicious anemia is not characterized by any specific reaction pattern; paranoid states, confused states and depressions are noted and marked irritability is a very common finding.

The prognosis of this psychosis is poor, just as the prognosis is poor in pernicious anemia with severe neurological changes of the cord. If severe degenerative changes are present in the brain, even though the blood count returns to normal and remains normal, improvement will not result. Death occurred in seven of these cases. Of the remaining nine patients, four were discharged, two made a good institutional adjustment, and three are unimproved. Of the four patients who recovered, two were classified as psychosis with somatic disease, pernicious anemia, one as involutional melancholia and one as paranoid dementia praecox.

The following case presents the more favorable outlook.

Case III. Frances H. was a married white female of 43 years of age. Familial history was negative for nervous and mental disease. One sister died of pernicious anemia. In February, 1932, pernicious anemia was diagnosed and patient was sent to a private hospital where she received three blood transfusions. The red blood count was 1,250,000 and hemoglobin was 30 per cent. She improved physically and was kept on a special diet and liver extract for a period of eight months. Medication was then stopped because the husband was out of work and could not afford to purchase the liver. Mental symptoms were first noted in May, 1933, fifteen months after the initial diagnosis of pernicious anemia, when patient became fearful and imagined someone was trying to harm her. She was agitated, depressed and had frequent crying spells. Liver therapy was instituted. Patient was sent to a private sanitarium in June for three weeks, but did not improve.

Upon admission to the Elgin State Hospital, in July, 1933, examination revealed a markedly agitated and depressed, resistive, thin female, measuring 61 inches in height and weighing 90 pounds. Physical examination was negative except for the poor state of nutrition. Neurological examination was difficult due to lack of cooperation. Patellar reflexes were increased. The red blood count was 4,600,000, the hemoglobin was 90 per cent. and the Wassermann reaction was negative. Mentally she was diagnosed involutional melancholia. Patient was not placed on liver therapy. She continued to be very fearful, restless, agitated, depressed and frequently required tube feeding. During August, 1933, the red blood count dropped to 3,100,000 and the hemoglobin to 64 per cent. The patient was placed on parenteral liver. She now weighed 75 pounds. During September the blood count returned to normal and the patient was less agitated and less restless and tube feedings were no longer required. She continued to improve until December, 1933, when she seemed to be completely recovered with full insight into her mental condition. She now weighed 110 pounds as compared to her previous weight of 75 pounds. In January, 1934, she was discharged as recovered. During the past

five years, the patient has remained well mentally and she has continued on liver therapy.

Although this patient's psychosis resembled that of involuntional melancholia, the authors believe it was due to pernicious anemia. The diagnosis of anemia was made fifteen months prior to the onset of the psychosis. The mental symptoms developed after a period of absence of liver therapy. No physical or mental improvement was noted after institutionalization until parenteral liver was given.

Though the prognosis of these cases, after the development of severe mental symptoms, is poor, these patients should be given the benefit of extensive and prolonged liver therapy. In our cases an attempt was made to raise and retain the hemoglobin as close to 100 per cent. as possible and the red blood count as close to 5,000,000 as possible.

CONCLUSIONS

1. Psychoses develop in four to seven per cent. of the pernicious anemia patients and lesser mental changes in thirty-five per cent.

2. Pernicious anemia was observed during the past eight years in 24 patients at the Elgin State Hospital. In sixteen the authors considered the anemia as the causative factor of the psychosis.

3. No characteristic reaction pattern was noted but according to the literature and in the cases observed, paranoid states, confused states and depressive features predominated. Irritability is a prominent symptom.

4. Prognosis in this psychosis is poor, yet, mental recoveries do occur and the patients should be given the benefit of prolonged and extensive anti-anemia therapy.

Dr. George A. Wiltrakis,
Chicago State Hospital, Chicago.

Dr. Anthony V. Partipilo,
55 East Washington Street, Chicago.

BIBLIOGRAPHY

1. Osler, W.: Textbook, The Principles and Practice of Medicine, D. Appleton and Company, New York, 1926.
2. Woltman, H. W.: Mental Changes Associated with Pernicious Anemia, *Am. J. Psychiat.* 3: 345, 1924.
3. Osgood, C. W.: Mental Changes Associated with Pernicious Anemia, *J. A. M. A.* 104: 2,155, 1935.
4. Young, R. H.: Neurologic Features of Pernicious Anemia, *J. A. M. A.* 99: 612, 1932.
5. Riley, W. H.: Clinical Study of 264 Cases of Pernicious Anemia, *Bull. of Battle Creek Sanitarium* 18: 195, 1923.
6. Reed, E. B.: A review of 64 Cases of Pernicious Anemia, *Nebr. S. M. Jour.* 22: 312, 1937.
7. Herman, M.; Most, H., and Jolliffe, N.: Pernicious Anemia Associated with Psychoses, *Arch. Neurol. and Psych.* 38: 348, 1937.
8. Bowman, K. M.: Pernicious Anemia with Psychoses, *Am. J. Psychiat.* 92: 371, 1935.

DISCUSSION

Dr. Arthur Weil, Chicago: In discussing this paper it must be pointed out that there are a large number of transitional conditions from minor mental symptoms which may be observed in as many as 64 per cent. of cases with pernicious anemia, to the actual organic acute type observed in about five per cent., and the point which I would like to discuss is whether we have a pathologic picture which might be associated with these different mental stages. With your kind permission I would like to show some lantern slides to illustrate the points.

Well known is the subacute combined degeneration of the spinal cord which is shown here in a series of sections in its final stage. We may have a complete destruction of both posterior and lateral columns, but the anterior horns may remain fairly well intact. If we study this condition at an early stage we see the following: the white matter of the spinal cord is still intact in certain regions but the myelin sheaths are beginning to swell together with swelling of the axis-cylinders in other areas. If we study the same condition in the brain of a case which clinically had been diagnosed as a mild psychosis with evidence of a paranoid state we find a similar picture in the brain. The pathology is confined to the white matter. The cortex remains intact and only when the disease progresses to severe mental degeneration do the ganglion cells of the cortex show degenerative changes.

The question arises, can we predict the effect of liver therapy at the different stages of the disease? We know that in the milder cases with irritation and mild confusional stages, the irritation disappears soon after liver therapy is started. In these early cases the swelling of the myelin sheaths has not yet combined with destruction of the axis-cylinders; liver therapy in these cases will remove the edema and the normal function of the nerve fibers will be reestablished.

As to the etiologic factor, it seems now that our old idea that the achlorhydria of the stomach should be the primary factor is no longer true. The cells of the mucous membrane of the stomach which produce hydrochloric acid at the same time produce the intrinsic factor which is responsible for the proper functioning of the myelin sheath. If these cells are degenerated they do produce neither hydrochloric acid or the intrinsic factor which normally will be stored in the liver. Giving liver, therefore, supplies the body with this hormone of vitamin which is important for the proper functions of the myelin sheath.

To conclude, the different stages of mental disease are accompanied by different stages of organic disease beginning with mild edema, followed by severe breaking down of the myelin sheath and the axis-cylinder and finally by degeneration of the cortical ganglion cells.

Dr. Charles F. Read, Elgin: If I may, I want to, compliment the officers and the members for this fine attendance and for the interest shown in the work of mental medicine as a part of the field of general medicine.

I do not know whether you realize that Dr. Wiltrakis has presented here one of the largest, if not the largest single group of pernicious anemia cases associated with psychoses found in the literature. I recently took occasion to look over the literature for the last six or seven years and found the largest single group was reported by Dr. Bowman in 1935—twenty-three cases, a little less than Dr. Wiltrakis has presented today.

I do not know that any more emphasis should be laid upon the apparent fact that there is no psychosis pathognomonic of pernicious anemia. We have, as has been pointed out, symptoms of varying character: schizoid, paranoid and confusional states such as are found in various other somatic diseases.

I might ask Dr. Weil if he is quite sure that the cases that have been autopsied and worked up with pernicious anemia who showed no psychosis during life had similar findings to those that were autopsied but had had a psychosis; in other words, is the psychotic state, even when it is confusional and paranoid in character, paralleled by brain changes? Some investigators say there is no particular parallelism in the findings, while others say there seems to be some difference in the histopathologic changes in those patients who have suffered psychoses.

We have been much interested, of course, in this series of cases as it has developed. I think it illustrates very nicely the advisability of long term study of various types of psychoses associated with various types of physical disease or trauma.

I hope that Dr. Wiltrakis will continue with this study and add to his series of cases as time goes on. I think we are at times apt to go into print with an article upon this or that disorder and then drop the study; later someone else writes another article, and so on. It is much better to continue on and perhaps develop points of interest that have not appeared in the beginning.

In conclusion I would call attention to the fact that in the state hospital service we are coming more and more—perhaps have finally arrived at the conclusion—that we are in the field of general medicine. We are dealing with an organism as a whole, not with a mind and a body that are held together in some tenuous manner. We do study things out quite carefully in the various state hospitals nowadays. We study the physical conditions and relate them to the patient's mental status, and this should be our aim just as far as possible; to keep this body-mind relation always to the front in our investigation and in our treatment.

Dr. Milton Goldberg, Manteno: I was interested in hearing that the essayist found more correlation in the psychic findings with that of the pathologic types of reaction; that is, the increased irritability and motor restlessness. Bowman stresses the delirium-like picture. That latter is probably a secondary physiologic alteration. A manic girl I saw was overweight and had tried to overcome this by strenuous reduction in food intake; in fact, she almost stopped eating entirely and developed a marked secondary anemia. At the time I performed a mental examination on her she

had a confusional state or delirium with disorientation. She was put on liver and copper and as her hemoglobin came up she became hypomanic. It may be that these confusional states are more a result of the oxygen lack and perhaps similar to fever delirium where you get a relative oxygen want.

Dr. G. E. Rooney, Chicago: In the past year I have had two cases referred to me by men who definitely saw mental symptoms in pernicious anemia. These patients, when put on increased amounts of liver, have shown a complete reversal and have become normal. In both cases there was a mild depression but following an increase in the dosage of liver these patients both cleared up.

Dr. George Wiltrakis, Elgin (in closing): I wish to thank Dr. Read for his kind words and for his stimulation. I do not know how to express my gratitude to Dr. Weil.

In regards to Dr. Goldberg's statements, our cases did not have a true delirium with acute active auditory hallucinations.

CANCER OF THE CERVIX

MARSHALL S. UNDERHILL, M. D.

EVANSTON, ILLINOIS

The important problem of the choice of the method of procedure in the treatment of cancer of the cervix always brings up the question as to what are the dominating factors in a case of cancer of the cervix that allows one to secure a marvelous result in the occasional case where, as most of the time, one is able to secure but a good result.

This is the report of a case of a cancer of the cervix cured for thirteen (13) years following the use of radium and x-ray.

REPORT OF CASE

The patient, a white female, aged 46 years, married 25 years, was admitted to the Evanston Hospital 7-22-25 thirteen years ago because of a bloody vaginal discharge with a loss of weight and strength of two months' duration. She had been told by a physician in her own community two weeks previous to her admission that she had a growth on the cervix.

Past History: Her past history was unimportant. There was no history of carcinoma in the immediate family. She had had five pregnancies and three miscarriages, with two children living and well.

The patient stated that for the past four or five years she had been going through her "change of life" during which time she menstruated six or seven times at intervals varying from five to twelve months.

While on a motor trip two months before her admission to the hospital she had a hemorrhage from the vagina that lasted for thirteen hours. In the following two months she lost six pounds in weight with a loss in strength.

Physical Examination: The general physical examination was negative. The patient was well nourished. The blood count was 3,500,000 red blood cells, 4,500 white blood cells with a hemoglobin estimate of 75 per cent.

Doctor W. C. Danforth's pelvic findings were as follows:

Vulva, negative.

Vagina, vaginal wall moderately relaxed.

Cervix, extensive soft growth, bleeds at a touch; originating mostly from the anterior lip of the cervix; does not invade the vaginal wall; small pieces detach very easily.

Fundus, size normal, mobility diminished.

Adnexa, negative.

Clinical diagnosis: The clinical diagnosis was carcinoma of the cervix.

Pathological diagnosis: The microscopic sections made from the specimens taken in 1925 at the time of examination and irradiation showed many mitotic figures, and the diagnosis made by the pathologist at the Evanston Hospital at that time was papillary carcinoma of the cervix uteri.

A reexamination of the same slides, No. 1383 (1925) and No. 1397 (1925), made on November 2nd, 1938, by pathologist E. L. Benjamin, present pathologist at the Evanston Hospital, revealed an anaplastic epidermoid carcinoma of the cervix uteri.

In a personal interview with Dr. E. L. Benjamin on November 2nd, 1938, he expressed the opinion that this was a carcinoma of the common "garden" variety, that it was highly malignant, and that it would fall in group IV, according to Broder's method of grading cancer.

Treatment: The patient received 7-24-25, 50 mgs. of radium in two capsules, screened with brass, into the center of the mass on the cervix. The cautery was used to make the opening into which the radium was inserted. Four needles each containing $12\frac{1}{2}$ mgs. of radium, screened with silver, were then inserted into the periphery of the growth, a total of 100 mgs. of radium that was applied for forty (40) hours making a dose of 4,000 mgs. hours. Two months later four x-ray treatments were given.

COMMENT: It is now thirteen years (13) since this patient had a carcinoma of the cervix and she is living and well.

What were the dominate factors in this case that have worked for longevity? Was it because the disease was discovered early? Was it because the radium was applied and followed by x-ray therapy? Was it because the radium was applied in a dose of 100 mgs. over a period of forty hours?¹ Or were the dominate factors in this case those that we do not know of about cancer at the present time?

Since 1925 brilliant medical men all over the world have concentrated their energy in an attack on the diagnosis and treatment of cancer of

the cervix. It is somewhat surprising to consider the variations in ideas on the subject that are promoted by these same authorities. I firmly believe from having read some of the literature in recent years that for every statement you cite to me in regard to the diagnosis and treatment of cancer of the cervix I can find for you an honest eminent man who states practically the opposite view.

Here are a few samples of the questions in regard to the diagnosis and treatment of cancer of the cervix that are as yet unanswered.

1. Surgery versus radium and x-ray. Many of the clinicians still discuss both sides of this question in their papers.

2. The question as to which is the best method of procedure in the treatment of cancer of the cervix—x-ray followed by radium or radium followed by x-ray, or radium preceded by x-ray and then followed by x-ray is still unsettled.

3. The question as to what constitutes an early and what is a late cancer of the cervix is still undecided.

4. The question as to the value of the repair of non-malignant lesions of the cervix as a preventive measure against the occurrence of cancer of the cervix has advocates on both sides.

There is no doubt about it that much good has come from all the work that has been done in late years on cancer of the cervix; old ideas have been emphasized and new ones developed.

Clinically speaking, I did say in 1925 that this was a case of advanced carcinoma of the cervix which would at least be in rhythm if viewed in the light of Shiller's recent work. Judged in 1938 from the results obtained from the treatment this case could easily be placed in the group of early carcinomata.

In 1938 I still believe this was a case of advanced cancer of the cervix with a high degree of malignancy and I am willing to theorize in regard to the factors other than the treatment per se that have worked for longevity.

CONCLUSIONS: I have at the present time arrived at two conclusions in regard to cancer of the cervix.

1. There is no place for surgery in the treatment of cancer of the cervix. All indications point to the fact that radium preceded or followed by x-ray therapy or both, is the treatment that should be used in 1938.

2. A good mental attitude to be in when one

is considering the treatment of a case of cancer of the cervix is that it is due to the host which carries it, probably because of the unknown factors inherent in the disease and the stage in which the growth is found a disease by itself, and it should be treated as such by the clinician in charge.

REFERENCES

1. Holthusen, H.: Principles governing roentgen and radium therapy, *The American Journal of Roentgenology and Radium Therapy*, 499, 1938.

DISCUSSION

Dr. W. C. Danforth: I agree completely with the first of your two conclusions, namely, that surgery has no place in the treatment of carcinoma of the cervix today. The only exception to this which might be made is that in the extremely early case of so-called intra-cellular carcinoma, in which there has been no breaking through the basement membrane. These are rarely found. Those which I have seen have been chance findings in uteri or cervixes removed without thought of malignancy and in which these characteristic pictures described by Schiller have been found. They might be found on biopsy after the use of the Schiller test. Radiation at present saves at least as many as surgery did without the high primary mortality.

Question 2. The exact technic of irradiation varies in the hands of various workers. There are at present a good many excellent men who believe that a very good sequence is primary x-ray followed by radium. The idea of Regaud is worth thinking about. He believes that cancer is most susceptible at the time the nuclei of the cells are segmenting. He therefore suggests extending treatment over a number of days, thus attacking as many segmenting cells as possible. In other words, a small amount of radium used over a longer time.

Why one cancer gives away to irradiation and another does not has not yet been satisfactorily answered. This case was a well advanced one. There were marked cauliflower masses in the cervix and, at first sight, it was not one in which one would be inclined to be hopeful. The estimation of radiosensitivity by the appearance of the cell has not been wholly satisfactory. The best clinics are now reporting a curability of one in three, with slight variations either way.

Question 3. I think we are pretty well in accord as to what is a late and what is an early cancer. A number of papers have taken this up. See Schmitz, for example. Clinically, an early cancer is one in which the lesion is still small, surrounded by normal cervical epithelium, and the uterus still freely movable. These are not often seen in practice. Pathologically, even this would no longer be early. See Schiller's paper in S. G. and O., some three years ago in which he gives diagrams.

The present speculations as to the influence of hormones upon the susceptibility to cancer are interesting

whether they lead to anything or not. Miller of the University of Michigan presents figures which indicate that our former idea that parous women are more susceptible is wrong. He indicates that the percentage of susceptibility is about the same in the women who have not borne children, taking the relative number of parous and non-parous women into account.

One of the most important things on the present day management of malignancy is its early recognition. This will depend upon public education, the influencing of more and more women to be examined regularly so that the early non-symptom producing growths may be found. Many are doing this now. If we can get the case when the cancer is still in the epithelium only with no dipping into the deeper tissues and with no surface laceration, we can cure many of them. Remember the old statement that "every cancer goes through a stage in which it is curable." In other words, if we see it when it can be wholly removed or destroyed in situ, the patient may be saved.

636 Church Street.

A REVIEW OF METRAZOL TREATMENTS

MORRIS ISENBERG, A.B., M.D.

Staff Physician, East Moline State Hospital

EAST MOLINE, ILLINOIS

At the East Moline State Hospital we have now employed metrazol shock therapy for more than a year and a half. As there is still much discussion on the usefulness of this new form of therapy, we believe our experience in this new field may contribute to a more established opinion on the efficacy of metrazol as a drug in the cure and care of mental patients.

In our first year begun on July 31, 1937, metrazol therapy was administered to forty-two patients on whom treatment was completed before the end of the year. Usually metrazol was injected two days a week until fifteen convulsive days were obtained. Treatments were discontinued whenever dangerous signs arose or when recovery was evident.

Of the forty-two patients in the series, there were seven recoveries, twenty-one improvements, and fourteen failures or unimproved cases at the end of the treatment period. This shows a recovery rate of 16 $\frac{2}{3}$ %. Thrice that percentage improved and have become better ward patients. One-third of the number treated showed no visible improvement when the therapy was concluded.

For the sake of a more critical study we divided our subjects into three groups according to the duration of their mental illness. Those

patients who had been mentally unbalanced for six months or less were put in the first or acute group, those who had been sick between six months and two years in the second or moderately chronic group and the remainder in the third or chronic group. There were eleven acute cases, fourteen moderately chronic ones and seventeen that fell into the chronic group. Of the eleven acute patients, three recovered, three improved and five remained unchanged. In other words about 27% recovered and 27% improved. There were the same number of cured ones in the second group of fourteen while the number improved was eight and unchanged three. In terms of percentage 21% were healed and 57% became better patients. Only one recovered in the chronic group of seventeen and ten improved.

Our statistics took on a much brighter hue when we examined the records of our metrazol patients on March 1, 1939. We found that twenty of the original forty-two patients had been discharged, some for more than one year. Only one of the discharged patients had been returned at any time. Of these twenty sent home seven were recovered, nine improved and four were unchanged at the conclusion of the metrazol course. But by the time these were discharged all four in the unimproved class had recovered and four from the improved list had to be put in the recovered group, thus swelling the number of recoveries to fourteen. This gave us a total recovery rate of 33 $\frac{1}{3}$ %. Moreover, we discovered that of the eleven in the acute group there were nine recoveries and one improvement and one unimproved case. The unimproved case has now improved after a second course of treatment administered in the last month. This shows that we have a recovery rate of about 82% in the acute group. The objection more or less valid may be raised that metrazol therapy had no part in the later recovery of our patients. This point we leave to others. In addition to the twenty discharges, we paroled two of the improved patients and one unimproved. One of the patients discharged as improved has returned at the same level of improvement for a second course of therapy. There was one in this group who escaped. Of the eighteen in the hospital nine are still better patients. Thus, only about 21% of the forty-two patients have derived no benefit from treatment. This is a very good

record as we must remember that there were seventeen very chronically ill patients in our study, from whom we could hardly have expected even an improvement. There was no change in the patients of the moderately ill group while one of the improved ones in the chronic list had recovered.

Among the forty-two who had received treatments there were thirty-three schizophrenics, six manic-depressives, two psychoneurotics and one afflicted with involuntional melancholia. There were five recoveries in the schizophrenia group and eighteen improvements while ten remained unchanged. Later two of the improved patients were able to be discharged as cured. Otherwise, there was no alteration in the condition of the schizophrenics after the end of treatment, except that one recovery fell into the improved category before discharge. It was to be noticed that four of the seven healed schizophrenics had been sick six months or less, two were in the moderately ill group and one had been unbalanced an unknown number of years. The six manic-depressives were equally divided among the cured, improved and unimproved groups when treatment was finished. At varying periods after the end of the attempted therapy five of the manic-depressives were discharged as cured, while one on the improved list escaped when his family showed no signs of releasing him. The two psychoneurotics recovered only after the completion of treatment. The patient suffering from involuntional melancholia improved enough under the therapy to be sent home.

Of the thirty-three schizophrenics, there were two of the simple type, fifteen of the hebephrenic sub-group, three catatonics, five paranoids and two of undetermined type. One of the two simple dementia praecox cases who had improved under treatment was able to be sent home at a later period as cured. We counted three recoveries, six improvements, and five failures in the hebephrenic type. One of the cured in this sub-group fell into the improved list just before his discharge. There is no other alteration to be made here. Among the nine catatonics one recovered, six improved and two remained at the same level. Except for two improvements resulting in cures, no change has taken place in this sub-group to date. There were no recoveries in the five paranoid schizophrenics. Three

improved somewhat, however, and these three have maintained this improved level. Like the paranoid schizophrenics the two of the undetermined type could not chalk up a recovery. Only one of the two improved and that one has remained thus. In terms of percentage 21% of all schizophrenics recovered and 48% improved while 30% showed no change. The hebephrenics produced 20% cures and the catatonics 33%, while none was recorded in the paranoid type.

From the above statistical study we have come to the conclusion that metrazol shock therapy has become an asset in the treatment of the mentally sick in our state institution.

SUMMARY: In the first year metrazol therapy was administered to forty-two patients on whom treatment was completed. 16 $\frac{2}{3}$ % recovered, 33 $\frac{1}{3}$ % improved and the remainder showed no change. On March 1, 1939, records showed that twenty of the forty-two patients had been discharged and that the recovery rate of 16 $\frac{2}{3}$ % is to be changed to 33 $\frac{1}{3}$ %. According to the records of March 1, 1939, there were 82% recoveries in the acute group. Only 21% of the forty-two patients given metrazol had no benefit from treatment. Five of the six manic-depressives treated were discharged as cured. Of the schizophrenics 21% recovered and 48% improved.

CASE REPORT OF DIVERTICULUM OF THE ESOPHAGUS

PERRY B. GOODWIN, M. D.

PEORIA

8/9/37. White male, 58 years old, was admitted to out clinic department.

Chief Complaints: (1) Difficulty in swallowing.

(2) Slight soreness in the throat.

Present History: Patient has noted some difficulty in swallowing for several years, gradually getting worse in the past nine months. He has little trouble during the first part of the meal, but as he eats his throat fills up and gets tight. Patient can then lean over and finds that the food runs back into his mouth. He can swallow liquids the easiest, but even they cause some trouble.

Past History: Had left nephrectomy 16 years ago for renal calculi.

Family History: Negative.

Physical Examination: The only important finding was a soft enlargement protruding slightly from the

sides of the esophagus, more marked on the right. The patient is able to regurgitate about eight ounces of undigested food.

Laboratory Work: Negative. (Urine, serology.)

Impression: Diverticulum of esophagus.

8/11/37. X-ray, fluoroscopic of esophagus: There is a large shadow seen in the right chest about as large as an orange. Barium meal showed that the area became partially filled with barium and no evidence of any passing below into the lower esophagus, but passed to the right filling up this particular area. Each position showed that this had a fluid level which changed with the position, but did not empty out.

Impression: Large diverticulum of the esophagus.

Further study requested: To fill this area to its full capacity and take lateral films in a horizontal position to see whether it would empty.

Request Granted: Study shows area in the right chest which measures 9 cm. wide and about 7 $\frac{1}{2}$ -8 cm. high. No barium was seen in the esophagus or stomach.

Reexamination of the esophagus, 8/13/37: Film taken before the meal was given shows the area smaller than on the previous examination, but the outline was rather dense due to retained material. The patient was requested to see if he could empty it by changing position which he did. This area measures about 5 $\frac{1}{2}$ by 6 cm.

Reexamination of the esophagus by barium meal: Patient was then instructed to take all the barium meal he could possibly take which amounted to 12 ounces. He stated it was impossible to take another spoonful. Film study taken in the vertical position shows cavity or pocket completely filled, 10 cm. broad and 8 $\frac{1}{2}$ cm. long. Apparently some of the meal was regurgitated into the esophagus.

The patient was then laid on the right side with the film taken in the anteroposterior position. This revealed a rather large pocket with the fluid level near the mid-vertebral line with an extension upward toward the esophagus of a cone-shaped area; probably this was the point of entrance. This measures 10 cm. long and 8 cm. wide with the point of entrance located 3 $\frac{1}{2}$ cm. above it. The patient was then placed in a left lateral position which showed the meal emptying out of the pocket, extending into the esophagus and then downward into the stomach. The pocket is about the location which was previously described as the point of entrance. At the lower border is another narrowed area similar to the one above, smooth in outline apparently connected to the stomach by a small opening as is seen on the film.

After examination by internist we were requested to make another fluoroscopic examination of the chest.

Fluoroscopic examination of the chest was again done and showed the opaque media to pass to the right of the midline into a large diverticulum of the esophagus.

Treatment and Course: 10/9/37. Diverticulum pouch was dissected free and exteriorized. 10/19/37. Gastrotomy was done due to increasing dysphagia. Patient developed slight infection in both surgical wounds soon after, but these subsided in a short time. 12/14/37. Patient developed a tachycardia. Electrocardiograph

suggested diffuse myocardial damage. 12/18/37. Diverticulum pouch was resected, postoperative course uneventful and the patient was discharged to the outpatient department for follow-up.

1/7/38. Esophagus-Barium: At this time Dr. Wright made studies of the esophagus with thick and thin mixtures which showed abscess of the large diverticulum as observed on the previous examination. He tried several positions, but could not get any barium to remain in the esophagus. Very marked improvement.

1/21/38. Out-patient Record: Gastrotomy wound seems to be closed and only a slight discharge from the neck. He was requested not to return unless something went wrong.

1/27/38. Esophagus-Barium: Further study by Dr. Wright was made with thick and thin mixtures which showed dilatation at the level of the 7th cervical, but did not show any definite recurrence in the upper right at the site of the previous diverticulum.

4/21/38: Esophagoscopy reveals satisfactory lumen.

Society Proceedings

THE OGLE COUNTY MEDICAL SOCIETY

The Ogle County Medical Society held a meeting October 26, 1939, at the Rochelle Town and Country Club.

A short business meeting with a re-election of the present officers was held.

Dr. Italo F. Volini, Professor of Medicine, Loyola University of Medicine, gave a lecture on the Sulfapyridine Treatment of Pneumonia. This was a most instructive talk and appreciated by all the doctors and guests.

Sincerely yours,

A. R. Bogue, M. D., Secy.

December 5, 1939—Vermilion County Medical Society, Dr. Lindon Seed. Subject, "The Treatment of Exophthalmic Goiter." Danville, Ill., 6:30 P. M.

December 11, 1939—Lake County Medical Society, Dr. Craig Butler. Subject, "Problems of the Diseases of the Newborn." St. Therese's Hospital, Waukegan, Ill., 8:00 P. M.

December 12, 1939—Effingham County Medical Society, Dr. H. E. Elghammer. Subject, "Rational Infant Feeding." Benwood Hotel, Effingham, Ill., 6:30 P. M.

December 12, 1939—North Central Illinois Medical Meeting, Bloomington, Illinois Hotel. All day meeting.

Dr. Benjamin Markowitz—"Jaundice Types with Case Reports."

Dr. Emil Hauser—"Problems of the Foot."

Dr. Milton Bohrod—"Biopsy of Lymph Nodes for Diagnosis."

Dr. Aaron Arkin—"Blood Dyscracias."

Dr. LeRoy Sloan—"Neurological Problems."

Dr. Herbert Mitchell—"The Differential Diagnosis of Cutaneous and Mucus Membrane Syphilis."

Dr. Norris J. Heckel—"Newer Advances in the Treatment of Infections of the Genito-Urinary Tract."

Dr. Edwin M. Miller—"Fractures About the Elbow."

Dr. Robert S. Berghoff—Heart Clinic with Dr. Donald Hirsch.

Dr. Warren H. Cole—"Surgical Aspects of Diseases of the Pancreas."

Dr. M. Herbert Barker—"Hypertension."

December 14, 1939—Union County Medical Society, Dr. D. A. Horner. Subject, "Treatment of the Post Due Patient." Anna, Ill.

December 15, 1939—Will Grundy Medical Societies, Dr. A. H. Parmelee. Subject, "Care of the Newborn and Diseases of the Newborn." Louis Joliet Hotel, Joliet, Ill.; 12:00 Noon.

December 15, 1939—Douglas County Medical Society, Dr. F. E. Schmidt. Subject, "Pneumonia." Tuscola, Ill.; 7:00 P. M.

December 19, 1939—Perry Memorial Hospital, Dr. M. P. Borovsky. Subject, "The Newly Born." Princeton, Ill.; 6:00 P. M.

December 20, 1939—Fulton County Medical Society, Dr. Stanley Gibson. Subject, "Diseases of the Respiratory Tract." Canton, Ill.; 8:00 P. M.

January 2, 1940—Physicians' Club of Kewanee, Dr. Irving Stein. Subject, "Sterility," and Dr. G. Weinfeld, "Mental Hygiene." St. Francis Hospital, Kewanee, Ill.; 6:00 P. M.

January 2, 1940—Vermilion County Medical Society, Dr. W. L. Winters and Dr. M. H. Barker: "Symposium on Pneumonia." Hotel Wolford, Danville, Ill.; 6:30 P. M.

January 5, 1940—Madison County Medical Society, Dr. Kellogg Speed. Subject, "Fractures About the Elbow Joint." Madison Sanitarium, Edwardsville, Ill.; 8:00 P. M.

At the Annual Meeting of the Seventh District Medical Society of Indiana, held on November 15, 1939, Dr. M. Blatt of Chicago discussed "Care of the Premature and Newborn Infant", and Dr. M. H. Barker discussed "Management of Pneumonia in Children and Adults."

COUNTY NEWS

Adams County held their first meeting of the year on Oct. 9th, at the Lincoln-Douglas Hotel, Quincy, Ill. After the business session the group joined the doctors to hear a talk on Group Hospital Insurance, by Enoch J. Brand.

Kane County enjoyed a Book Review Oct. 11th, at Copley Hospital, Joliet, Ill. Mrs. V. M. Seron gave a splendid review on "My Days of Strength," by Anne Warner Fearn. The President, Mrs. W. Whitaker presided.

Knox County met Oct. 20th, at the Galesburg Club. Mrs. K. C. Baker conducted the meeting. The main topics discussed were: Hygeia, National Health and the Wagner Act.

Will-Grundy County had an enjoyable meeting Oct. 10th at the home of Mrs. G. Houston, Joliet, Ill.

Vermilion County held their meeting Oct. 3rd at the Walford Hotel, Danville, Ill. The President, Mrs. J. H. Williamson presided. Mrs. C. C. Winning, the Illinois State President and Mrs. C. C. Kane the State Corresponding Secretary were guests of honor.

Sangamon County, President, Mrs. D. M. Sirca. The meeting was held Oct. 9th at the Children's Service League & Day Nursery, Springfield, Ill. After a personally conducted tour of the institution, a lecture was given concerning the work and educational program of the League.

Logan County, President Mrs. J. M. Knochel. The meeting was held Oct. 26th. Dinner was served at the Spinning Wheel Tea Room, Lincoln, Ill. The business session was held at the home of Mrs. F. M. Hogans. The honored guest was the State President, Mrs. C. C. Winning who gave a talk on, "The Organization and Activities of the Woman's Auxiliary to the A.M.A." Mrs. H. Otten discussed the activities of the Springfield Auxiliary.

The reports forwarded to this Committee by the County Press and Publicity Chairman have been most encouraging. A few, however, are conspicuously absent from our files and it is hoped that these will co-operate in the near future. There are over 5,000 Auxiliary meetings held throughout the United States annually which the National Chairman, Mrs. J. P. Simonds wishes to report. The fact that the National President, Mrs. R. K. Packard and the National Chairman of Press Publicity, Mrs. J. P. Simonds are both from Illinois should inspire all Chairmen to fulfill their obligations.

Mrs. (C. W.) Bessie A. Stuart,
Press and Publicity Chairman.

Marriages

WILLIAM FITZGERALD, Chicago, to Miss Hilda Duffy of Sycamore, Ill., September 12.

RALPH L. HIGH to Miss Jeanne Price, both of Chicago, September 1.

JOSEPH MARCOVITCH, Dwight, Ill., to Miss Lillian Ganzer in Brooklyn, September 6.

HENRY H. MERRELL, Yorkville, Ill., to Mrs. Frank Lincoln Johnson of Chicago, September 9.

WALTER SHRINER, Elgin, Ill., to Miss Ruth Arline Shearer of Aurora, August 26.

Personals

Dr. George deTarnowsky gave a talk on "Breast Tumors" before the Effingham County Medical Society at Effingham on November 14.

Dr. Italo F. Volini gave a talk on "Diseases of the Heart" before the Bureau County Medical Society at Princeton on November 16.

Dr. C. I. Reed was invited to talk on "Vitamin Therapy" before the Douglas County Medical Society on November 17.

Dr. Willard VanHazel gave a talk on "Empyema" before the Will-Grundy County Medical Society on November 17.

Dr. James T. Case was invited to give a talk on "Radiological Findings in the Gastro-Intestinal Tract" before the Iroquois County Medical Society on November 28.

Dr. Ford Hick and Paul S. Rhoads held a Pneumonia Symposium before the McLean County Medical Society at Bloomington on November 14.

Dr. J. J. Callahan will give a talk on "Fractures" and Dr. William J. Dieckman will speak on "Sulfanilamide in Obstetrics and Gynecology" before the Knox County Medical Society on November 28.

Dr. O. E. Van Aleya addressed the Rock River Valley Eye, Ear, Nose and Throat Society at Rockford, Nov. 21. His subject was, "Irrigation of the Frontal and Maxillary Sinuses."

Dr. Max Thorek addressed the Milwaukee Society of Clinical Surgery, Tuesday, November 28 on "Electrosurgical Obliteration of the Gallbladder (Report of 685 cases)."

On the occasion of the Fiftieth Anniversary of the founding of the University of Sofia, Bulgaria, Dr. Max Thorek of Chicago, Attending Surgeon of Cook County Hospital and Surgeon-in-Chief of the American Hospital of Chicago has been made a Commander of the Order of St. Alexander of Sofia for his contributions to surgical science. Dr. Thorek has been decorated previously by the Italian and French Governments.

Dr. Louis W. Sauer will give a paper on "Prevention and Treatment of Enteritis in Infants" before the Rock Island County Medical Society on November 28.

Drs. J. J. Callahan and W. J. Dieckmann will present the scientific program before the Knox County Medical Society at Galesburg on November 28, subjects "Fractures" and "Sulfanilamide in Obstetrics."

Dr. Chester C. Guy was invited to address the Morgan Park Woman's Club on November 27, subject "Why Fear Cancer"?

Dr. W. L. Winters will give a paper on "Pneumonia" before the Jo Davies County Medical Society on November 28.

Drs. Ralph Reis and M. L. Blatt will present a scientific program before the Physicians' Club of Kewanee on November 6. Their subjects will be "Medical Complications of Pregnancy" and "The Allergic Child."

Dr. James T. Case will address the Iroquois County Medical Society at Watseka on November 28, subject "Radiological Findings in the Gastro-Intestinal Tract."

Dr. Austin A. Hayden addressed the Cincinnati Academy of Oto-Laryngology on Monday, October 23. The title of his address was "Otologists, Hearing Aids and Leagues for the Hard of Hearing."

Dr. Edmund Jacobson will present a Summary of Progressive Relaxation as a System of Assisting Bodily and Mental Recuperation from Fatigue and Avoidance of Mental Ills at Boston University on the evening of November 6. This will be the 7th lecture of a survey course there entitled, "The Fundamentals of Health Education." On the afternoon of the same day, he will discuss Some Practical Aspects of Relaxation at the Bouvé-Boston School of Physical Education.

Dr. J. P. Greenhill read a paper before the Maimonedes Medical Society, Detroit, Michigan, on "Endocrinology in Gynecology," on October 24.

Dr. Leo K. Campbell has been invited to address the Union County Medical Society at Anna on "Recent Advances in the Management of Diabetes," November 9.

Drs. Irving Dreyer will speak on Arthritis and J. R. Ballinger will speak on a Medical Legal subject before the Hancock County Medical Society on November 6.

The Doctors' Service Bureau reports that they have recently added about five hundred square feet to their office space at 201 N. Wells Street. This was made necessary by the large increase in membership during the past six months.

Dr. M. Herbert Barker will give a talk on Pneumonia before the doctors of Rockford on November 7.

Dr. Charles Edwin Galloway will address the Vermilion County Medical Society at Danville on November 7.

Dr. Fred M. Drennan presented an address before the Academy of Medicine at Lima, Ohio, December 13, 1939, on "The Application of the

Principle of Acid Control in the Treatment of the Complications of Peptic Ulcer."

Drs. W. C. Danforth, Joseph Baer, John Bigler, Franklin Corper, Lowell Bushnell and Sidney Levinsohn presented a program before the DeKalb County Medical Society on November 30.

Dr. Otto L. Bettag, White Haven, Pa., has been appointed superintendent of the Livingston County Sanatorium, Pontiac, succeeding Dr. Julius B. Stokes, resigned.

Miss Alice H. Miller, Gainesville, Fla., has been appointed director of public health for the Tuberculosis Institute of Chicago and Cook County, succeeding Mrs. Adelaide Ross, resigned.

The Chicago Laryngological and Otological Society were addressed November 6 by Drs. Hans Brunner on "Surgical Repair of Facial Paralysis"; Frank J. Novak, Jr., "Giant Follicular Hypertrophy of Nasopharynx," and William A. Smiley, "Subglottic Polyp Following Intratracheal Anesthesia."

At a meeting of the Chicago Orthopaedic Society November 10 the speakers were Drs. Henry W. Meyerding, Rochester, Minn., on "Ewing's Tumor (Endothelial Myeloma: Solitary Diffuse Endothelioma; Hemangioendothelioma; (Angioblastoma); Diagnostic and Therapeutic Experience in 114 Cases" and Paul H. Dube, "Lesions of Bone Associated with Thyroid Disease."

The Chicago Society of Internal Medicine were addressed November 27 by Drs. Michael H. Streicher on "Appendicitis—Incidence of Amebiasis in a Clinical Review of 3,407 Cases"; Ralph B. Bettman and Gemma M. Lichtenstein, "Acute Cholecystitis" and Laurence E. Hines, Allen H. Hoover and Edwin C. Graf, "Effect of Sulfanilamide on the Fibrinolytic Activity of Hemolytic Streptococci."

The Chicago Gynecological Society was addressed November 17 by Drs. Henry Close Heselstine and George P. Bohlender on "Closure and Subsequent Care in Obstetric and Gynecologic Abdominal Wound Disruption" and Richard W. Telinde, Baltimore, "Decidua-like Changes in the Endometrium Without Pregnancy."

Dr. Arthur H. Curtis, professor of obstetrics and gynecology, Northwestern University Medical School, will deliver the presidential address before the twenty-fourth annual meeting of the

Institute of Medicine of Chicago December 5 on "Some New Features of Gynecologic Anatomy and Related Clinical Problems."

Dr. Joseph B. DeLee, professor emeritus of obstetrics and gynecology, the School of Medicine of the Division of Biological Sciences, University of Chicago, observed his seventieth birthday October 29 at a party planned to benefit the Chicago Maternity Center, which he founded. He was presented with cuff links forged from a pair of forceps which he used in his early days of practice. They were the gift of the staff of the center and were presented by Dr. Beatrice E. Tucker, who directs the institution.

News Notes

—Announcement has been made by the board of directors of the North Shore Health Resort at Winnetka, Illinois, that Dr. Frank W. Blatchford, Sr., of Winnetka has been named medical director of the resort. He assumed his new duties November 15.

Dr. Blatchford is one of the most widely known physicians on Chicago's North Shore, where he has been engaged in the practice of medicine and surgery for more than thirty years.

Born and educated in Chicago, he served his internship in the Chicago Lying-In Hospital. Following two years as a surgeon with Dr. Bayard Holmes, he was associated with the late Dr. Robert H. Babcock, well-known heart and lung specialist.

Dr. Blatchford was engaged in general medical practice on Chicago's north side for two years before taking over, in 1907, the practice of the late Dr. John R. Fletcher in Winnetka. For the past five years, he has confined his practice to internal medicine.

The North Shore Health Resort, now approaching its fortieth year of operation, is a well-equipped general medical sanitarium, catering to a varied clientele, some of whom merely seek rest and relaxation while others have definite medical problems.

—The quarterly winter meeting of the Iowa and Illinois Central District Medical Association will be held at the Blackhawk Hotel, Davenport, Iowa, December 14, 1939.

After a dinner at 6:30 P. M. there will be a short paper by Walter J. Balzer, M. D., of Dav-

enport on "Acute Hydramnions and Postpartum Hemorrhage—A Case Report."

The principal address of the evening will be by Dr. Percy H. Swahlen, professor of obstetrics and gynecology at St. Louis University, St. Louis, Mo., he will be introduced by Dr. H. A. Meyers of Davenport and will speak on "Important Points in Obstetrics Confronting the General Practitioner."

The discussion on his paper will be opened by Dr. E. N. Nash of Galesburg, Dr. Phebe Pearsall-Block of Moline, and Dr. H. A. Weis of Davenport.

—On October 31 a special dinner meeting was held in the main dining room of the Jefferson Hotel by the Peoria City Medical Society. The guest speakers were Dr. John H. Musser, professor of Medicine at Tulane University, who spoke on the subject, "Observations in Coronary Occlusion," and Dr. Paul B. Magnuson, professor of Surgery at Northwestern University, who spoke on the subject, "Low Back Complaints as Seen by the General Practitioner." Dr. Harry B. Magee, President of the Peoria City Medical Society, was a classmate of the two guest speakers at the University of Pennsylvania, class of '08.

—The Department of Public Health were hosts to the Officers and Council of the Illinois State Medical Society and the state organization on Maternal Welfare at a dinner at the Leland Hotel in Springfield, Sunday, November 5, 1939. Guests at the meeting were: Dr. Baxter of the Department of Public Health, Dr. Penning, Field Representative; Dr. Templeton, President-elect of the Illinois State Medical Society; Dr. Wightman, Chief of the Division of Child Welfare; Dr. Ball, State Pediatrician; Dr. F. H. Falls, Dr. Charles Newberger, and Dr. Skeel of Cleveland, Ohio. Between 50-60 members of the county organizations throughout the state were present.

Dr. Williamson presided over the meeting introducing members of the Illinois State Maternal Welfare Committee who, in turn, discussed different sections of the new county program outlining the work for the ensuing year. The work and progress of the Lake County Maternal Welfare Committee was extremely gratifying and should be an incentive to the county chairmen. —The Tuberculosis Institute of Chicago and

Cook County, through the Theodore B. Sachs Memorial Fund, will support at the University of Illinois College of Medicine a study on bronchiectasis and pulmonary abscesses. This study, for which \$1,000 is available, is being conducted by Dr. Felix Basch, of the Department of Pediatrics, and Dr. Paul H. Holinger, of the Department of Otolaryngology.

—The Charles Sumner Bacon Lectures for 1939-1940 will be delivered in the Medical and Dental College Laboratories Building, 1853 West Polk Street, Chicago, in Room 423, on December 6 and 7, 1939.

By Dr. Robert Meyer, formerly Director, Pathological Institute (Gynecological Clinic), Honorary Professor, Friedrich-Wilhelms University, Berlin. Program—December 6, 1939, Wednesday, 1 P. M.—“The Basis of the Histological Diagnosis of Carcinoma.” December 7, 1939, Thursday, 4 P. M.—“Diagnosis of Early Carcinoma of the Cervix.”

—The Illinois Eye and Ear Infirmary has instituted a course of training for orthoptic technicians following principles outlined by the recently organized American Orthoptic Council. Four technicians will be taken for a six months course beginning in January.

—Twelve cases of typhoid with one death occurred at DePue, Bureau County, during September, according to the *Illinois Health Messenger*. The outbreak was ascribed to a raw milk supply used by all the patients. When the supply was cut off as a control measure the epidemic ended, the *Messenger* said.

—Dr. James J. Smith, St. Louis University School of Medicine, class of 1937, has been awarded the Jessie Horton Koessler Fellowship of the Institute of Medicine of Chicago. Under the fellowship, which carries a stipend of \$500, Dr. Smith will work with Dr. Andrew C. Ivy at Northwestern University Medical School in research on evacuation of the gallbladder in pregnancy.

—Dr. Robert Meyer, formerly director of Pathological Institute (Gynecological Clinic) and honorary professor at Friedrich-Wilhelms University, Berlin, will deliver the Charles Sumner Bacon Lectures for 1939-1940 at the Medical and Dental College Laboratories Building, University Illinois College of Medicine December 6-7. His subjects will be “The Basis of the

Histological Diagnosis of Carcinoma” and “Diagnosis of Early Carcinoma of the Cervix.”

—Dr. Peter Kronfeld, professor of ophthalmology at Peiping Union Medical College, Peiping, China, for the past six years has been appointed dean of instruction at the Illinois Eye and Ear Infirmary. This is a new position, in which Dr. Kronfeld will supervise instruction of interns and residents and will have charge of short courses to be given at various times at the infirmary. Dr. Kronfeld, who graduated from the University of Vienna Faculty of Medicine in 1923, came to Chicago in 1928 as assistant professor of ophthalmology at the University of Chicago. In 1929 he became associate professor and remained on the faculty until he went to Peiping in 1933.

—The Institute of Medicine of Chicago announces that the entire Elizabeth McCormick Child Research Grant of \$1,000 for 1939-1940 will be used for the encouragement of research and that awards have been made to Dr. Mila I. Pierce, Evanston, for work on leukemia; to Dr. Heyworth N. Sanford for a study of the role of the qualitative platelet factors in the coagulation of the blood, and to Dr. Clayton J. Lundy for a study of heart murmurs in children with rheumatic heart disease, utilizing a heart sound recording machine simultaneously with an electrocardiograph.

—The state department of health announces that during the current pneumonia season both serum and sulapyridine will be distributed free. To obtain them, physicians must have specimens from patients tested in approved laboratories for the type of pneumonia involved and must agree to render reports to the department. Deaths occurred at the rate of 94 per thousand among serum-treated patients against 150 per thousand among comparable nonserum-treated patients during the first half of 1937. These two groups were all from a list of 2,100 patients from whom specimens were taken and tested in approved laboratories. The serum and sulapyridine may be obtained from the centers which have been established throughout the state.

Deaths

JAMES MERLIN FITZGERALD, Chicago; Jenner Medical College, Chicago, 1908; a Fellow, A.M.A.; professor of mental physiology at Bennett Medical College,

1903-1910; aged 69; died, August 16, in San Francisco of carcinoma of the bladder and liver.

FREDERICK HENRY GUNN, East St. Louis, Ill.; St. Louis University School of Medicine, 1909; a Fellow, A.M.A.; fellow of the American College of Surgeons; past president of St. Clair County Medical Society and the Southern Illinois Medical Society; member of the surgical staffs of St. Mary's and Christian hospitals; aged 56; died, September 26, in the Temple University Hospital, Philadelphia, of carcinoma of the liver.

ARTHUR HENRY HARMS, Knoxville, Ill.; Rush Medical College, Chicago, 1904; member of the Illinois State Medical Society; member of the board of education; aged 58; secretary of the staff of the Galesburg (Ill.) Cottage Hospital, where he died, September 21, of coronary thrombosis.

SAMUEL J. LITZ, Chicago; Chicago College of Medicine and Surgery, 1916; a Fellow, A.M.A.; for many years member of the board of education; aged 56; died, September 10.

ADAM EMORY KAUFFMAN, Chicago; Rush Medical College, Chicago, 1885; aged 82; died, September 3, in the Presbyterian Hospital of coronary sclerosis.

GEORGE CASSELL NELSON, La Harpe, Ill.; St. Louis College of Physicians and Surgeons, 1910; a Fellow, A.M.A.; aged 55; died, September 21, of coronary thrombosis.

MARCUS SOLOMON OLIVER, Chicago; Northwestern University Medical School, Chicago, 1912; a Fellow, A.M.A.; member of the American Urological Association; aged 54; died, September 11, of coronary thrombosis and chronic myocarditis.

LORAN ERNEST ORR, Springfield, Ill.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1907; a Fellow, A.M.A.; coordinating epidemiologist to the state department of health; at one time superintendent of Cass, Logan, Mason, Menard and Sangamon counties; aged 56; died, September 10, of coronary thrombosis.

HOWARD D. MANCHESTER, Peoria, Ill.; Hahnemann Medical College and Hospital, Chicago, 1884; aged 79; died, September 4, in the Methodist Hospital, of coronary arteriosclerosis.

CLINTON L. MONTGOMERY, Blue Mound, Ill.; Rush Medical College, Chicago, 1895; served during the World War; aged 72; died, September 20, of coronary thrombosis.

ROBERT LESTER PAXTON, Lemont, Ill.; University of Illinois College of Medicine, Chicago, 1930; member of the Illinois State Medical Society; aged 35; died, September 30, of poison, self administered.

BERNARD PORTIS, Chicago; Rush Medical College, Chicago, 1921; a Fellow, A.M.A.; died suddenly of heart disease November 1, aged 42. Dr. Portis was assistant professor of surgery in the University of Illinois College of Medicine and associate attending surgeon in Michael Reese Hospital. Previous to the heart disease, which proved to be fatal, he had suffered an

attack of toxic encephalopathy. Dr. Portis is survived by two brothers who are physicians—Drs. Milton and Sidney A. Portis.

HARRY PRESTON PRATT, Chicago; National Homeopathic Medical College, Chicago, 1892; Harvey Medical College, Chicago, 1896; Bennett College of Eclectic Medicine, Chicago, 1896; aged 79; died, September 14, of chronic myocarditis.

JOSEPH CLYDE RENWICK, Warren, Ill.; Rush Medical College, Chicago, 1904; aged 58; died, August 29.

JONATHAN MANNING ROBERTS, Chicago; Columbia University College of Physicians and Surgeons, New York, 1896; aged 68; died, September 6, of chronic myocarditis.

ERNEST MAX SASVILLE, Collinsville, Ill.; Northwestern University Medical School, Chicago, 1902; aged 76; died, August 27, of chronic myocarditis.

FRED HARRISON SCHLEICH, Chicago; Chicago Medical School, 1926; member of the Illinois State Medical Society; on the staff of the Illinois Masonic Hospital; aged 50; died, September 16, of cerebral hemorrhage, arteriosclerosis and hypertension.

ROBERT SONNENSCHNEIN, Chicago; Rush Medical College, Chicago, 1901; a Fellow, A.M.A.; associate clinical professor of laryngology and otology at his alma mater since 1933; formerly professor of diseases of the ear, nose and throat at the Post Graduate Medical School; member of the American Academy of Ophthalmology and Otolaryngology, the American Laryngological Association, the American Laryngological, Rhinological and Otolological Society and the American Otological Society; fellow of the American College of Surgeons; past president of the Chicago Laryngological and Otological Society; member of the medical advisory board of the third district in Illinois during the World War; contributed a chapter on testing of hearing in Jackson and Coates's book "The Nose, Throat and Ear and Their Diseases," published in 1929, and a section on surgery of the ear in "A Text Book of Surgery" by Christopher, published in 1935; aged 60; since 1926 attending otolaryngologist to the Michael Reese Hospital, where he died, November 8, of paratyphoid infection and pneumonia.

CLINTON B. STALEY, Enfield, Ill.; Barnes Medical College, St. Louis, 1898; served during the World War; aged 68; died, September 22, as the result of a fall from his front porch.

JOHN J. STOLL, Chicago; Rush Medical College, Chicago, 1885; a Fellow, A.M.A.; an Affiliate Fellow of the American Medical Association; aged 78; died, September 22, of uremia and chronic glomerular nephritis.

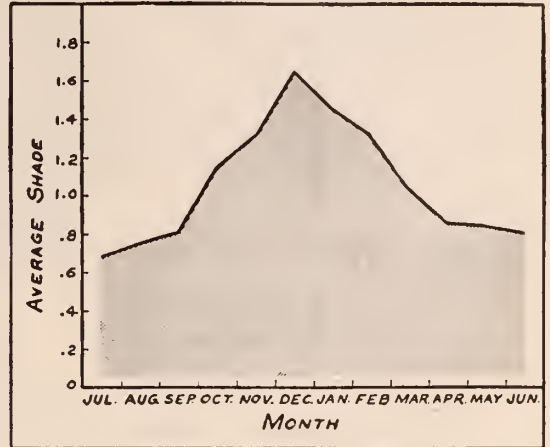
ALBERT BERNARD YUDELSON, Chicago; Northwestern University Medical School, Chicago, 1906; a Fellow, A.M.A.; associate professor of medical jurisprudence and nervous and mental diseases at his alma mater; member of the Central Neuropsychiatric Association; past president of the Chicago Neurological Society; served during the World War; attending neurologist to the Cook County Hospital and the Wesley Hospital; aged 67; died, August 27, of coronary thrombosis.

WEATHER FORECAST— HEAVY SMOKEFALL

SMOKE exerts a definite influence on the weather at this season by reducing the amount of sunlight. Beginning in September there is a steady rise in atmospheric pollution until in December it becomes double that of midsummer, according to a recent report of a two-year study made by the U. S. Public Health Service in ten of the largest American cities, representing a population of millions. One of the most surprising findings was that there is no decrease in the dust content of the air either during or after a rain.

Winter Sunlight an Unreliable Antiricketic

Atmospheric pollution is but one of many forces militating against the therapeutic effects of ultraviolet rays in winter. Others, to name only a few, are cloudiness, precipitation, and clothing. In winter, moreover, it is often impracticable to give sunbaths to infants during the very time they are most susceptible to rickets—the first six months of life.



Average atmospheric pollution in 10 large American cities, 1931-1933. In many smaller communities, even worse conditions may prevail under any of the following combinations: (1) soft coal, (2) low inland wind velocity, (3) concentrated manufacturing activity, (4) no zoning regulations, (5) no smoke abatement ordinances.

Dependable the Year 'Round OLEUM PERCOMORPHUM

The physician can dispel uncertainty in the treatment of rickets simply by prescribing a few drops of Oleum Percomorphum daily. Each gram supplies not less than 60,000 vitamin A units and 8,500 D units (U.S.P.). This maximum vitamin potency in minimum bulk gives Oleum Percomorphum outstanding usefulness for young and premature infants. Constant bioassay and special processing of this antiricketic assure the stated vitamin potency and low percentage of fatty acids. Supplied in 10 and 50 c.c. bottles and 10-drop capsules in boxes of 25 and 100.

MEAD JOHNSON & COMPANY, Evansville, Indiana, U. S. A.

Please enclose professional card when requesting samples of Mead Johnson products to co-operate in preventing their reaching unauthorized persons



**Syntroge Capsules,
A New Roche Remedy
for the control of
hyperacidity and
flatulence, places
main reliance on the
principle of adsorption.**

Adsorption of Acid *vs.* Alkalinization

In order to perfect a remedy of this type we developed a special aluminum hydroxide of unusually high adsorptive capacity (Aluminum Hi-gel, Roche). This ingredient of Syntroge Capsules is capable of adsorbing large quantities of HCl. The acid is held in colloidal gel form and is passed through the intestinal tract without injury to the mucosa. The formula includes two mild antacids, calcium carbonate and bismuth subcarbonate, which have an immediate neutralizing effect, but do not carry the neutralizing process to the alkaline side—thus obviating the acid-provoking action so characteristic of stronger alkalies, such as sodium bicarbonate. Syntroge Capsules also contain Syntropan, the Roche synthetic antispasmodic which gives atropine-like therapeutic effects without mouth-dryness, tachycardia, or mydriasis. One or two capsules, with a glassful of water, taken immediately on the appearance of hyperacidity or flatulence, is all that is required in most cases. This dose may be repeated, if necessary. Patients having recurring waves of hyperacidity may be made comfortable by one or two capsules taken before the peak of acidity is reached.

HOFFMANN-LA ROCHE, INC., ROCHE PARK, NUTLEY, NEW JERSEY

SYNTROGE CAPSULES

**FOR THE EFFECTIVE CONTROL OF
HYPERACIDITY AND FLATULENCE**

Cut Out This Page and Post Conspicuously

BUYERS INDEX

ABDOMINAL SUPPORTERS

S. H. Camp & Co., Jackson, Mich..... 14

FOODS

Borden Company, 350 Madison Ave., New York..... 12

Coca-Cola Co., Atlanta, Ga..... 77

Corn Products Refining Co., New York City..... 11

R. B. Davis Co., Hoboken, N. J.....

Knox Gelatine Laboratories, Johnstown, N. Y.....

Mead, Johnson & Co., Evansville, Ind..... 17

S. M. A. Corporation, Cleveland..... 7

FINANCIAL AND INSURANCE

Medical Protective Co., Fort Wayne, Ind..... 24

Physicians Casualty Co., Omaha, Neb..... 21

HOSPITALS

Stokes Hospital, Louisville, Ky..... 21

INSTITUTE

Chicago Tumor Institute, 21 West Elm St..... 21

PHARMACEUTICALS

American Can Co., 230 Park Ave., New York City..... 3

Armour & Co., Chicago.....

Ernst Bischoff, Ivoryton, Conn.....

Bovine Company, Chicago.....

Bristol-Myers Co., New York..... 15

Carrick, G. W., Co., 20 Mt. Pleasant Ave., Newark, N. J. 22

Ciba Company, Cedar and Washington St., New York City. .

Denver Chemical Co..... 29

E. Fougera & Co.....

Gold Pharmacal Co., New York City..... 24

Harrower Laboratory 23

Hoffman-LaRoche, Inc., Nutley, N. J..... 15

Hynson, Westcott & Dunning, Charles and Chase Sts., Baltimore 22

Illinois Eye and Ear Infirmary.....

Lederle Laboratories, 30 Rockefeller Plaza, New York...30, 31

Lilly, Eli & Co., Indianapolis, Ind..... 16

Maggot Products Co., 222 No. Bank Drive, Chicago.....

Morris, Philip & Co., 19 Fifth Ave., New York.....

Nutrition Research Laboratories, 332 S. Michigan Ave., Chicago

Parke, Davis & Co., Detroit, Mich..... 5

Petrolagar Laboratories, 8134 McCormick Blvd., Chicago... 4

Reed & Carndick, Jersey City, N. J.....

Roche Organon, Inc., Nutley, N. J..... 2

Schering & Glatz, Inc., New York City.....

G. D. Searle & Co., 4737 Ravenswood Ave., Chicago.....

Shaver Corp. of America.....

Sharp & Dohme, 111 N. Canal St., Chicago..... 8

E. R. Squibb & Sons, New York..... 9

Frederick Stearns & Sons, New York..... 10

Upjohn Co., Kalamazoo, Mich..... 6

Wm. R. Warner & Co., 113 W. 118th St., New York City.. .

Winthrop Chemical Co., 170 Varick St., New York City... 13

Zemmer Co., Pittsburgh, Pa..... 20

SANATORIA AND SANITARIA

Edward Sanatorium, Naperville, Ill..... 23

Kenilworth Sanitarium, Kenilworth, Ill..... 20

Michell Farm Sanatorium, Kenilworth, Ill..... 32

Milwaukee Sanitarium, Wauwatosa, Wis.....Front Cover

Norbury Sanitarium, Jacksonville, Ill..... 20

North Shore Health Resort, Winnetka..... 23

Rogers Memorial Sanitarium, Oconomowoc, Wis..... 32

Waukesha Springs Sanitarium, Waukesha, Wis..... 20

Weirick's Sanitarium, Elgin, Ill..... 21

RADIUM

Physicians Radium Assn., 55 E. Washington St., Chicago.. 21

SURGICAL SUPPLIES

Baum Co., New York.....

General Electric X-Ray Corp., 2012 W. Jackson Blvd., Chicago

The NORBURY SANATORIUM

JACKSONVILLE, ILLINOIS

INCORPORATED and LICENSED

For the Treatment of Nervous and Mental Disorders

DR. ALBERT H. DOLLEAR, Superintendent

DR. FRANK GARM NORBURY

DR. SAMUEL N. CLARK Associate Physicians

Address
Communications

THE NORBURY SANATORIUM, Jacksonville, Illinois



BUILDING ABSOLUTELY FIRE-PROOF

Waukesha Springs Sanitarium

FOR THE CARE AND TREATMENT OF
NERVOUS DISEASES

BYRON M. CAPLES, M. D., Medical Director

FLOYD W. APLIN, M. D.

Waukesha, Wisconsin

E. J. Kelleher, M. D.
Medical Director

Kenilworth Sanitarium

Est. in 1905 by Sanger Brown, M. D.

Built and Equipped for the Treatment of
Nervous and Mental Diseases

Christy Brown
Business Manager

Stanley C. Usalis, M. D.
Junior Physician

Address:
Box 600
Kenilworth, Ill.

**Always
DEPENDABLE
PRODUCTS**

ZEM-VITA COD LIVER OIL CONCENTRATE

A tasteless preparation biologically standardized and guaranteed as to strength and purity. Each capsule is equal in Vitamin A and C potency to not less than the equivalent of one teaspoonful of cod liver oil NNR and USPXI. Write for literature.

IL 12-38

THE ZEMMER COMPANY, Oakland Station, PITTSBURGH, PA.

Chicago Tumor Institute

21 WEST ELM STREET

Phone: Delaware 5600

Scientific Committee

Max Cutler, M. D., Chairman
Sir G. Lenthal Cheatle, F. R. C. S.
Henri Coutard, M. D.

Arthur H. Compton, Ph. D.
Ludvig Hektoen, M. D.

The Chicago Tumor Institute offers consultation service to physicians and radiation facilities to patients suffering from neoplastic diseases. Graduate instruction in radiotherapy is offered to qualified physicians.

The Radiation Equipment includes:

- One 220 k.v. x-ray apparatus
- One 400 k.v. x-ray apparatus
- One 500 k.v. x-ray apparatus
- One 10 gram radium bomb.



PHYSICIANS CASUALTY
ASSOCIATION



PHYSICIANS HEALTH
ASSOCIATION

SINCE 1902

SINCE 1912

Hospital
Accident
Sickness

INSURANCE

FOR ETHICAL PRACTITIONERS EXCLUSIVELY
(50,000 policies in force)

LIBERAL HOSPITAL EXPENSE COVERAGE FOR
\$10.00 PER YEAR

\$5,000.00 accidental death	For
\$25.00 weekly indemnity, accident and sickness	\$33.00 per year
\$10,000.00 accidental death	For
\$50.00 weekly indemnity, accident and sickness	\$66.00 per year
\$15,000.00 accidental death	For
\$75.00 weekly indemnity, accident and sickness	\$99.00 per year

37 years under the same management
\$1,700,000. INVESTED ASSETS
\$9,000,000. PAID FOR CLAIMS
\$200,000. deposited with State of Nebraska for protection of our members.
Disability need not be incurred in line of duty—benefits from the beginning day of disability.
SEND FOR APPLICATIONS, DOCTOR, TO
400 FIRST NATIONAL BANK BLDG.
OMAHA, NEBRASKA

MORPHINE AND OTHER DRUG ADDICTIONS

Selected patients who wish to make good and learn how to keep well; methods easy, regular, humane
Dr. Weirick's Sanitarium, Elgin, Ill.

Patient: "How about going fishing with me, Doctor?"

Doctor: "Sorry, I don't know how."

Patient: "Well, you better learn. You might be president some day."

Doctor: "Well, Madam, what is your ailment?"

Old Lady: "Pain in my arms, doctor. I can hardly lift them over my head, and it's the same with my legs."—*Jour. Michigan State Med. Soc.*

The schoolmaster was angry with the doctor's small son. "I will certainly have to ask your father to come and see me," he remarked.

"You'd better not," said the boy; "he charges \$5 a visit."

THE STOKES HOSPITAL 923 Cherokee Road, Louisville, Kentucky

Our ALCOHOLIC treatment destroys the craving, restores the appetite and sleep, and rebuilds the physical and nervous condition of the patient. Liquors withdrawn gradually; no limit on the amount necessary to prevent or relieve delirium.

MENTAL patients have every comfort that their home affords. The DRUG treatment is one of gradual Reduction. It relieves the constipation, restores the appetite and sleep; withdrawal pains are absent. No Hyoscine or rapid withdrawal methods used unless patient desires same.

NERVOUS patients are accepted by us for observation and diagnosis as well as treatment.

E. W. STOKES, Medical Director. Phones High. 2101-2102

Radium Rental Service

By

THE PHYSICIANS RADIUM ASSOCIATION

Organized for the purpose of making radium available to physicians to be used in the treatment of their patients. Radium loaned to physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

The Physicians Radium Association

Room 1307—55 East Washington St.,
Pittsfield Bldg., CHICAGO, ILL.

Telephones: Central 2268-2269
Wm. L. Brown, M.D., Director

HORMOTONE "T"

direct therapy in
AMENORRHEA
IRREGULAR MENSTRUATION
MENOPAUSE

Bottles of 40 tablets

Each tablet contains approximately 200 international units of biologically standardized ovarian follicular hormones.



G. W. CARNRICK CO.

20 Mt. Pleasant Ave., Newark, N. J.



Wintertime is Thant's Time

For the relief of throat affections common in winter many physicians have found Thant's Lozenges, H. W. & D., effective.

Thant's Lozenges were developed for medical use in the treatment of throat soreness and irritation and following tonsillectomy. They dissolve slowly, permitting prolonged throat medication, reach areas inaccessible with gargles, are convenient and economical, are antiseptic and anesthetic for the mucous membranes of the throat and mouth.

Thant's Lozenges, H.W.&D.

contain Merodicein, H. W. & D., 1/8 grain, and Saligenin, H. W. & D., 1 grain. They are supplied in vials of 12 lozenges each.

Every H. W. & D. product is investigated and proved chemically, pharmacologically, and bacteriologically, in our laboratories before marketing.

HYNSON, WESTCOTT & DUNNING, INC.
 BALTIMORE, MARYLAND



NORTH SHORE HEALTH RESORT

225 Sheridan Road

Phone: Winnetka 211

WINNETKA, ILLINOIS

A general medical sanitarium for the care and treatment of patients with medical diseases, mild nervous or mental disorders, and disabilities incidental to old age.

MODERN THERAPY OF ARTHRITIS

Easily accessible to physicians of Chicago and vicinity.

Complete equipment. Unusually attractive location and grounds. Very moderate rates.

Frank W. Blatchford, Sr., M.D., Medical Director

THE EDWARD SANATORIUM

ESTABLISHED IN 1907 BY DR. THEODORE B. SACHS

Jerome R. Head, M. D., Medical Director

Alberto L. de Guevara, M. D., Associate Medical Director

NAPERVILLE, ILLINOIS

An institution affiliated with the Chicago Tuberculosis Institute for the treatment, by modern methods, of selected cases of Pulmonary Tuberculosis.

Attractive location and surroundings.

Buildings and equipment modern and adequate for all emergencies.

Well trained staff of physicians and nurses.

Physicians are invited to visit the Sanatorium at any time. They are assured of every professional courtesy and consideration.

For detailed information, rates and rules for admission apply to—

THE CHICAGO TUBERCULOSIS INSTITUTE

Phone Central 8316

Rooms 504

360 North Michigan Ave.

Chicago

Pioneer work . . .

is always hard—many times misunderstood—but it has its rewards. There is a great satisfaction in having accomplished something in our efforts to make it easier for the profession to alleviate some of the ills that beset mankind.

The HARROWER LABORATORY, Inc.

Glendale, California

*Ending a quarter of a century
of pioneer work in the field of*

Endocrinology

ADREMIN

ANABOLIN

MENOCRIN

ENDOTHYRIN

ADRENO-CORTIN

PLESTRIN IN OIL

PROFESSIONAL PROTECTION

SINCE 1899
SPECIALIZED
SERVICE

A DOCTOR SAYS:

"A policy in your company is a great medium for the preservation of peace of mind and well being. The service in this and other cases can be recommended without hesitation."

THE

MEDICAL PROTECTIVE COMPANY

OF FORT WAYNE, INDIANA

WHEATON, ILLINOIS

CONTENTS—Continued

Experience with the Audiometer. <i>G. Koehler, M.D., Springfield</i>	555
Intractable Peptic Ulcer. <i>C. H. Drenckhahn, M.D., Urbana</i>	559
Psychosis with Pernicious Anemia. <i>George A. Wiltrakis, M. D. and Anthony V. Partipilo, M. D., Chicago</i>	562
Cancer of the Cervix. <i>Marshall S. Underhill, M.D., Evanston</i>	566
A Review of Metrazol Treatments. <i>Morris Isenberg, M. D., East Moline</i>	568
Diverticulum of the Esophagus. <i>Perry B. Goodwin, M.D., Peoria</i>	570

EDITORIALS

Merry Christmas!	489
Platform of the American Medical Association.....	489
The Socialization of Pharmacy.....	490
Medicine in Russia.....	491
Health Under Hitler.....	492
Wingate Johnson Will Be the Editor.....	492
Publishers Oppose Wagner Bill.....	492
Papers for 1940 Annual Meeting.....	492
District Court in Texas Requires Citizenship.....	493
Citizenship as a Condition Medical Licensure.....	494
Wilbur E. Post, Dean of Rush Medical College.....	495
Medical Economics. <i>Edwin S. Hamilton</i>	496
Report of Sub-Committee on Medical Economics.....	497
Report of Chairman Medical Service Bureau. <i>W. M. Hartman</i>	498

CORRESPONDENCE

Contributions of Chicago Medical Society to Public Welfare. <i>Frank Maple and H. P. Saunders</i>	499
Lafayette Appreciates Educational Committee.....	501
Wagner Act Should Be Defeated. <i>G. B. Faulcy</i>	502
The Family Doctor. <i>Miss Evelyn Parker</i>	503
Southern Illinois Medical Society. <i>Andy Hall</i>	504
National Physicians' Committee.....	504
Woman's Auxiliary	505
Openings for Physicians.....	505
Meeting of International Surgeons.....	505
American Board of Obstetrics.....	505

SOCIETY PROCEEDINGS

Ogle County	571
Adams County	571
Marriages	572
Personals	572
News	574
Deaths	575

A Unique Remedy of Unique Merit

ELIXIR BROMAURATE

Is of pre-eminent therapeutic value in

Whooping Cough

- Cuts short the duration of the illness, reduces the frequency of the attacks, relieves the distressing, painful cough and gives the child rest and sleep.
- **ELIXIR BROMAURATE** is equally valuable in other PERSISTENT COUGHS and in BRONCHITIS and BRONCHIAL ASTHMA.
- **ELIXIR BROMAURATE** is a standard, assayed and palatable gold preparation. The dosage for children is a teaspoonful every 3 to 4 hours. Adult dosage two teaspoonfuls.

In four-ounce original bottles

GOLD PHARMACAL CO., New York

Book Reviews

CANCER OF THE LARYNX. By Chevalier Jackson, M. D., Sc. D., LL.D., F. A. C. S., Honorary Professor of Broncho-Esophagology and Consultant in Broncho-Esophagologic Research, Temple University Medical School, Philadelphia; and Chevalier L. Jackson, A. B., M. D., M. Sc. (Med.), F. A. C. S., Professor of Broncho-Esophagology, Temple University Medical School, Philadelphia. 309 pages with 189 illustrations on 116 figures, and 5 plates in colors, containing 50 illustrations. Philadelphia and London: W. B. Saunders Company, 1939. Cloth, \$8.00.

This work by an outstanding authority is the last word on the subject and should be in the library of every throat specialist.

THE MERCK INDEX. Merck & Company Manufacturing Chemists, Rathway, N. J. Price \$3.00.

The fifth edition of Merck Index is just off the press. This encyclopedia of chemicals and drugs represents the most extensive compilation of this authoritative reference work that has been undertaken since the first edition appeared in 1889.

The steady progress of chemistry and its allied sciences has produced an unusual array of authentic scientific data on the physical, chemical and medicinal properties, as well as the various uses of chemicals and drugs. In the new edition of The Merck Index—

comprising nearly twice the number of pages of the previous edition—there will be found 5,900 descriptions of individual substances; 4,500 chemical, clinico-chemical reactions, tests and reagents by the author's name; formulas for preparation of culture media, fixatives and staining solutions; useful tables; antidotes for poisons; literature references and other dependable information.

The Merck Index presents several features to which reference is seldom made in chemical reference works, such as information for the pharmacist, physician, dentist, and veterinarian. For this reason the book should be of inestimable value to research workers who desire to establish prior information on the subject which they are investigating. Because of the outstanding importance of chemistry in industry, The Merck Index will be of service whenever problems are related to chemistry. The price, established on a nonprofit basis is \$3.00.

FRACTURES. By Paul B. Magnuson, M. D. 317 illustrations, Third Edition, Revised and Enlarged. Philadelphia, Montreal, London. J. B. Lippincott Company. 1939. Price, \$5.00.

The changes made in this edition are numerous. Additions have been made in the discussion of first aid in the treatment of compound fractures. The work is intended to meet the needs of the man who first sees the fracture. The fact that the work has gone through three editions in rapid succession speaks volumes in its favor. The work should be in the library of every surgeon and general practitioner.

A MANUAL FOR DIABETIC PATIENTS. By W. D. Sansum, M. D., and Alfred E. Koehler, M. D., and Ruth Bowden, B. S., New York. The MacMillan Company. 1939. Price, \$3.25.

The purpose of this book is to make the patient as familiar as possible with his disorder and to serve as a guide to augment the specific and individual instruction he receives as a patient.

TUMORS OF THE HANDS AND FEET. Edited by George T. Pack, M. D. St. Louis. The C. V. Mosby Company. 1939. Price, \$3.00.

The symposium which comprises the subject matter of this work originally appeared in the January, 1939, issue of *Surgery*. Infection, injuries and malformation of the hands and feet have long engrossed the attentions of many surgeons. It is therefore needful to consider tumors of the hands and feet in some detail, in order to institute adequate and early treatment.

OBSTETRICAL PRACTICE. By Alfred C. Beck, M. D. More than one thousand illustrations. Second Edition. Baltimore. The Williams & Wilkins Company. 1939. Price \$7.00.

This work is a veritable atlas of obstetrical practice; 1,100 drawings illustrate the subject beyond all possibility of misunderstanding. Some of the illustrations eliminate lengthy descriptions.

The chapters on Toxemia and Abortion have been thoroughly revised. The sections on complications of

pregnancy bring much new material. A new chapter appears on retained and adherent placenta. Resuscitation of the new born infant is discussed in the light of recent observation on asphyxia and physiology of respiration.

THE HEALTH INSURANCE DOCTOR, HIS ROLE IN GREAT BRITAIN, DENMARK AND FRANCE. By Barbara N. Armstrong. Princeton. Princeton University Press. 1939. Price, \$3.00.

In this work the author gives a complete and clear picture (as she sees it) of the work of the Health Insurance Doctor—his average income, his precise fees for service, how many patients he may carry on his list, what free drugs he may describe, what State control is imposed upon him, what "paper work" and reporting he must do, what his responsibility is in the administration of relief and the prevention of malingering, and what the Doctor himself thinks of the plan.

AN INTRODUCTION TO MEDICAL MYCOLOGY. By George M. Lewis, M.D., and Mary E. Hopper, M.S. Chicago. The Year Book Publishing Company. 1939. Price, \$5.50.

Both dermatologists and general practitioners will find this new monograph the most *useful* book on fungous diseases in the English language—dermatologists, because it presents a simple, not-too-technical explanation of how to make a laboratory diagnosis; general practitioners, because it tells plainly and clearly what they need to know in order to diagnose and treat such common conditions as dermatophytosis (athlete's foot), ringworm of the body, beard and scalp, and otomycosis.

In diagnosis, the thoroughness and practicality of the work are evidenced by the fact that *15 different diagnostic steps or procedures are discussed with reference to each fungous disease in such complete detail that general practitioners as well as dermatologists, pathologists and bacteriologists can carry out and interpret each one.* Every detail of equipment and technic of the measures adaptable to the average medical office is given as fully as those that require extensive laboratory facilities.

TEXTBOOK OF NERVOUS DISEASES. By Robert Bing, M.D. Translated and Enlarged by Webb Haymaker. From the Fifth German Edition with 207 Illustrations including 9 in color. St. Louis. The C. V. Mosby Company. 1939. Price, \$10.00.

Three characteristics make this work outstanding; the clarity of its style and composition, the accuracy with which the facts are presented, and the inexorable logic used in the interpretation of clinical findings. In his text book, Bing has elaborated on the latest advances in neurology in Europe, has unfolded his own immense experience and has brought the practitioner detailed, precise therapeutics by the true physician.

ILLINOIS STATE MEDICAL SOCIETY

OFFICERS OF SECTIONS, ILLINOIS STATE MEDICAL SOCIETY, 1939-1940

SECTION ON MEDICINE

E. M. Stevenson, Chairman, Bloomington
W. O. Thompson, Secretary, Chicago

SECTION ON SURGERY

Frederick Christopher, Chairman, Evanston
Charles L. Patton, Secretary, Springfield

SECTION ON EYE, EAR, NOSE AND THROAT

Frank W. Brodrick, Chairman, Sterling
Thomas D. Allen, Secretary, Chicago

SECTION ON PUBLIC HEALTH AND HYGIENE

John J. McShane, Chairman, Springfield
N. O. Gunderson, Rockford, Ill.

SECTION ON RADIOLOGY

Warren E. Furey, Chairman, Chicago
Harry W. Ackemann, Secretary, Rockford

SECTION ON PEDIATRICS

H. Wm. Elghammer, Chairman, Chicago
Orville Barbour, Vice-Chairman, Peoria
Bert I. Beverly, Secretary, Oak Park

SECTION ON OBSTETRICS AND GYNECOLOGY

W. A. Malcolm, Chairman, Peoria
Herbert E. Schmitz, Secretary, Chicago

SECRETARIES' CONFERENCE

A. R. Brandenberger, Chairman, Danville
A. R. Bogue, Vice-Chairman, Rochelle
Carl E. Clark, Secretary, Sycamore

COUNTY SOCIETIES

This list is corrected in accordance with the best information obtainable at the date of going to press. County Secretaries are requested to notify The Journal of any changes or errors

County	President	Secretary
Adams	Donald Root, Mendon	C. A. Hendricks, Quincy.
Alexander	Edward Miller, Cairo	J. S. Johnson, Cairo.
Bond	D. T. Brown, Mulberry Grove	W. R. Ketterer, Greenville.
Boone	K. L. Hood, Belvidere	E. F. Dettmann, Belvidere.
Bureau	R. B. Poppens, Princeton	C. R. Bates, Ladd.
Calhoun	(See Pike-Calhoun)	
Carroll	R. H. Petty, Mt. Carroll	L. B. Hussey, Savanna.
Cass	J. A. McGee, Virginia	Geo. L. Athey, Beardstown.
Champaign	R. C. Armstrong, Champaign	W. H. Showengerdt, Champaign.
Christian	Perry Duncan, Taylorville	H. M. Seaton, Morrisville.
Clark	R. B. Boyd, Casey	H. C. Houser, Westfield.
Clay	J. P. Shore, Sailor Springs	M. H. Parker, Flora.
Clinton	H. B. Warren, Breese	J. Q. Roane, Carlyle.
Coles-Cumberland	Martin Bisson, Charleston	W. F. Stafford, Mattoon.
Cook	Nathan S. Davis, III, Chicago	H. Prather Saunders, Chicago.
Crawford	J. H. Price, Robinson	J. W. Long, Robinson.
De Kalb	E. W. Telford, Dekalb	Carl E. Clark, Sycamore.
De Witt	H. L. Meltzer, Clinton	Wm. R. Marshall, Clinton.
Douglas	Carlton R. Smith, Villa Grove	J. O. Cletcher, Tuscola.
Du Page	Ernest S. Watson, Elmhurst	A. R. Rikil, Naperville.
Edgar	Nettie M. Dorris, Paris	J. J. Murphy, Paris.
Edwards	A. J. Boston, Albion	R. L. Motor, Albion.
Effingham	S. J. Hanson, Effingham	G. Marshall, Effingham.
Fayette	M. Greer, Vandalla	E. A. Kuehn, Vandalla.
Ford	S. B. Furby, Paxton	M. D. E. Peterson, Paxton.
Franklin	Geo. Burkhardt, Benton	C. P. Holoffe, West Frankfort.
Fulton	H. C. Putman, Canton	O. M. Wood, Ipava.
Gallatin	J. C. Murphy, Ridgway	E. W. Burroughs, Ridgway.
Greene	W. T. Stickley, White Hall	W. H. Garrison, White Hall.
Hancock	R. R. Loomis, Warsaw	Blair Kelly, Ferris.
Hardin	L. D. Dusch, Golconda	H. H. Watson, Elizabethtown.
Henderson	C. J. Eads, Oquawka	Elmer T. Swann, Oquawka.
Henry	D. E. Meier, Kewanee	P. J. McDermott, Kewanee.
Iroquois	N. O. Hungness, Sheldon	L. E. Messman, Onarga.
Jackson	Ben Fox, Carbondale	Edward K. Ellis, Murphysboro.
Jasper	D. R. Martin, Newton	R. S. Wishard, Wheeler.
Jefferson Hamilton	C. J. Anslinger, Mt. Vernon	Andy Hall, Mt. Vernon.
Jersey	H. R. Gledhill, Jerseyville	R. G. Mindrup, Jerseyville.
Jo Daviess	G. C. McGinnis, Warren	R. B. Logan, Galena.
Johnson	Wm. Thompson, Cypress	E. A. Veach, Vienna.
Kane	H. T. Mostrom, Batavia	K. M. Manougian, Elgin.
Kankakee	A. L. Nickerson, Kankakee	Chas. Allison, Kankakee.
Kendall	No Society.	
Knox	Louis N. Tate, Galesburg	Wm. F. Maley, Galesburg.
Lake	L. E. Bovik, Waukegan	M. T. Brown, Zion City.
La Salle	D. O. Conley, Streator	Roswell T. Pettit, Ottawa.
Lawrence	E. M. Cooley, Lawrenceville	Ralph B. Armitage, Lawrenceville.
Lee	C. G. Pool, Compton	J. L. Tavenner, Dixon.
Livingston	H. L. Lockner, Chatsworth	J. G. Barnhiser, Pontiac.
Logan	Le Roy Branom, Lincoln	Lee N. Hamm, Lincoln.
McDonough	R. O. Stites, Industry	Wm. M. Hartman, Macomb.
McHenry	Geo. H. Pflueger, Crystal Lake	J. F. Harris, Richmond.
McLean	H. W. Wellmerding, Bloomington	H. P. Sloan, Bloomington.
Macon	S. J. Wilkinson, Decatur	F. R. Martin, Decatur.
Macoupin	J. H. Finney, Girard	J. J. Grandone, Gillespie.
Madison	R. C. Berry, Livingston	D. D. Monroe, Alton.
Marion	H. E. Ryan, Centralia	E. N. Neber, Centralia.
Mason	F. J. Corey, Havana	D. V. Auld, Havana.
Massac	W. S. Dixon, Metropolis	J. H. Gann, Brookport
Menard	Irving Newcomer, Petersburg	R. E. Valentine, Tallula.
Mercer	L. E. Robinson, Aledo	V. A. McClanahan, Aledo.
Monroe	E. T. Lark, Columbia	J. A. Werth, Waterloo.
Montgomery	Geo. A. Telfer, Hillsboro	H. F. Bennett, Litchfield.
Morgan	G. L. Drennan, Jacksonville	Friedrich Engelback, Jacksonville.

(Continued on page 27)

(Continued from page 26)

Moultrie	S. H. Ambrose, Lovington.....	W. B. Kilton, Sullivan.
Ogle	G. S. Henderson, Holcomb.....	A. R. Bogue, Rochelle.
Peoria	H. B. Magee, Peoria.....	C. W. Magaret, Peoria.
Perry	Geo. H. Guttridge, DuQuoin.....	H. I. Stevens, Tamaroa.
Platt	W. N. Slevors, White Heath.....	J. M. Holmes, Monticello.
Pike	C. P. McRaven, Pittsfield.....	F. N. Wells, Pittsfield.
Pope	S. P. Ward, Golconda.....	L. S. Barger, Golconda.
Pulaski	Oscar Karraker, Olmsted.....	Otis T. Hudson, Mounds.
Randolph	C. O. Boynton, Sparta.....	W. W. Fullerton, Steeleville.
Richland	E. L. Williamson, Calhoun.....	Paul C. Weber, Olney.
Rock Island	Louis Ostrom, Rock Island.....	Paul Youngberg, Moline.
St. Clair	Lawrence A. Ryan, East St. Louis.	R. F. Sondag, East St. Louis.
Saline	Neva Skelton, Eldorado.....	Robert Ferrell, Eldorado.
Sangamon	E. L. Bernard, Springfield.....	E. H. Ennis, Springfield.
Schuyler	Geo. C. Bates, Rushville.....	A. W. Ball, Rushville.
Scott	No Society.	
Shelby	Theo. Thompson, Shelbyville.....	C. H. Hullick, Shelbyville.
Stephenson	John J. Grant, Freeport.....	C. M. Becker, Freeport.
Tazewell	C. A. Cox, Morton.....	C. A. Nelson, Pekin.
Union	M. E. Cosand, Dongola.....	W. J. Benner, Anna.
Vermilion	Robert Clements, Danville.....	A. R. Brandenberger, Danville.
Wabash	E. P. Keneipp, Mt. Carmel.....	H. A. Elkins, Mt. Carmel.
Warren	H. L. Kampen, Monmouth.....	Chas. P. Blair, Monmouth.
Washington	P. B. Rabenneck, Nashville.....	G. A. Green, Nashville.
Wayne	G. Ray Hill, Fairfield.....	J. T. Blakely, Fairfield.
White	Frank C. Sibley, Carmi.....	J. A. Legier, Carmi.
Whiteside	Neal J. Marquis, Sterling.....	G. J. Pohly, Rock Falls.
Will-Grundy	Geo. Woodruff, Joliet.....	Earl Leimbacher, Joliet.
Williamson	R. L. Kane, Herrin.....	J. W. Tidwell, Herrin.
Winnebago	N. C. Bullock, Rockford.....	Wm. K. Ford, Rockford.
Woodford	Ernest Pearson, Eureka.....	W. S. Morrison, Minonk.

POLITICAL INDEPENDENCE

Census Taker: How many in your family, madam?
She, snappily: Five—me, the old man, kid, cow, and cat.

And the politics of your family?

Mixed—I'm Republican, the old man's Democrat, the kid's wet, the cow's dry, and the cat's a Mormon.

LEARNED FAST

Dora had returned from Sunday School where she had been for the first time.

"What did my little daughter learn this morning?" asked her father.

"That I am a child of Satan," was the beaming reply.

Book Reviews

PROCTOSCOPIC EXAMINATION AND DIAGNOSIS AND TREATMENT OF DIARRHEAS. By M. H. Streicher, M. D. Springfield, Illinois Baltimore, Maryland. Charles C. Thomas, Publisher. 1940. Price, \$3.00 postpaid.

This useful book presents a brief and clear method of the technique of proctoscopic examination. It is a practical outline of the diagnosis and treatment of the most common forms of diarrheas.

It covers the author's experience with over seven thousand patients. Well illustrated.

SYNOPSIS OF PEDIATRICS. By John Zahorsky, M.D. Third Edition. St. Louis. The C. V. Mosby Company. 1939. Price, \$4.00.

In this revision every chapter has been carefully studied and the material corrected in conformity with the recent pediatric literature. Many paragraphs have been rewritten and some new sections added. As in former editions particular stress is laid on the clinical features of disease.

AT CROSSROADS

Medicine stands today at the crossroads of public relations. One way leads over the bridge of compulsory health insurance into the valley of State Medicine and regimentation. The other leads straight ahead along a constantly widened and improved highway which has brought to the people of this country longer life and better health than that enjoyed by the citizens of any other nation under the sun.

Through the initiative of private physicians, America has become the medical center of the world. . . . This is the splendid contribution of a free profession to a free people. It is the responsibility of the medical profession to protect and preserve this heritage in order that it may be passed on unimpaired to future generations.—*Illinois Medical Journal*.

FAMILY MEDICAL COSTS IN U. S. RANGE FROM \$10 TO \$60

American families spend from \$10 to \$60 a year for medical care, including drugs. This information is revealed in a "preliminary" survey made by the U. S. Department of Agriculture concerning the buying habits of 62,000 representative American families with incomes ranging from nothing to \$10,000 a year.—*Modern Medicine*.

The Family Complete—Fibber McGee: Molly, where had we better plant these Baby Breath seeds.

Molly: Well, I'd say to plant 'em between the 'Mums and the Poppies.

"Your wife needs a change," said the doctor. "Salt air will cure her."

The next time the physician called he found the Scotchman sitting by the bedside fanning his wife with a herring.—*Spice of Life*.

MEDICINE

The practice of medicine is a personal service. It can not be mechanized. No matter how much laboratory work may be done, the fundamental service is that rendered by the physician in taking the history, examining the patient, determining what laboratory tests are necessary, and putting all of the data together to make the diagnosis. Not infrequently, repeated examinations and prolonged observations are necessary also.

One often hears the expression "health is purchasable," as if by putting so much money into a slot machine one could receive a certain producer "health."

There is a limit to the amount of medical work a physician can do well. He can at best "work up" not more than four new cases and see a few former patients in a working day.

This fact alone exposes the fallacy of the "medical mill" that systems of health insurance and medical cooperatives depend upon for their existence.

The more rapid the turnover and the more impersonal the service, the less valuable is the individual piece of work.

There is no substitute, and never will be, for the individual painstaking service that characterizes the best type of medical practice of today.

The public must be made to realize this for its own good.—*Pittsburgh Medical Bulletin*.

WHERE THE DOLLARS GO

The average American village family spends \$44.67 annually on recreation. Of this, \$13.80 goes for motion pictures. These facts are brought out in a recent report of the U. S. Department of Agriculture, whose home economics bureau studied some 9,400 white families in 140 villages. Yet a family typical of the group surveyed pays only \$29.13 a year to its family doctor, according to the Committee on Costs of Medical Care.

Citing these figures, observers point out that the small-town physician collects from his families only about two-thirds of what they spend each year on all types of amusement.

The comparison has been carried further:

America spends annually \$1,344,000,000 on tobacco; \$1,229,073,000 on soft drinks, ice cream, candy, and gum; \$314,368,000 on cosmetics and beauty parlors. Total for "extras": \$2,887,441,000. This, as against only \$1,090,000,000 which the C.C.M.C. reveals as the yearly sum paid to the nation's private practitioners.—*Medical Economics*.

PRIZES FOR BABIES

Speaking of the French and German nations offering prizes for more babies, the editor of *Railroad Trainman* observes: "This question goes deep into the very substratum of human life. While we in the United States have not as yet begun to look upon this problem as one affecting the continuity of things in our world, this issue will arise at a not-distant date. . . . We cannot possibly escape in our tiny world the things which have produced the conditions complained of in European states. Are these things manifestations of a decaying western world?"



When prolonged moist heat is indicated in the local treatment of

**LUMBAGO • MUSCULAR RHEUMATISM • OSTEO ARTHRITIS
RHEUMATOID ARTHRITIS • FIBROSITIS • PLEURODYNIA**

it is best applied by means of Antiphlogistine, which maintains its heat for many hours without devitalizing or rendering the tissues sodden. It is an aid to improving the circulation through the parts, encouraging dissipation of the inflammatory deposits and reducing the pain.

Antiphlogistine

THE DENVER CHEMICAL MANUFACTURING COMPANY

163 VARICK STREET • NEW YORK CITY

A new therapeutic procedure in the treatment of whooping cough—

PERTUSSIS ANTIGEN (Detoxified) *Lederle*

IN A SERIES OF OVER A THOUSAND CASES of whooping cough treated with this new antigen, JOSLIN and CHRISTENSEN* found the duration of the disease to be reduced two weeks as compared with an untreated control group. Likewise, the incidence of complications in the treated group was less than 1% as contrasted with nearly 20% in the controls.

In a series of several hundred cases in which the antigen was used as a *prophylactic*, a protection rate of over 90% was obtained in the children exposed one to several days. About three-fourths of the children immunized during the incubation period escaped the disease.

"Pertussis Antigen (Detoxified) *Lederle*" usually helps in the treatment of whooping cough when administered early:

- by reducing the incidence of complications;
- by shortening the duration of the attack;
- furthermore, it appears to offer a considerable degree of protection in the prophylaxis of pertussis, even in exposed cases.

DOSAGE:

For curative use: 3 to 5 subcutaneous injections, 1.5 to 2 cc. every other day.

For immunization of direct contacts: 3 subcutaneous injections, 1.5 to 2 cc. every two or three days.

For general prophylactic use—children not directly exposed: 3 subcutaneous injections, 2 cc. each at weekly intervals.

PACKAGES:

3 vials—2 cc. each
1 vial—20 cc.

*Unpublished data—JOSLIN, C. L. and CHRISTENSEN, T. A.

LEDERLE LABORATORIES, INC.
30 ROCKEFELLER PLAZA NEW YORK, N. Y.



You prescribe daily vitamins for the children —
but how often do they *take* them?

"Martin Rumsey,
you have had
enough vitamins today!"



IN SELECTING the Vitamin A and D product you recommend for children, consider the real question—do the children really take the medicine steadily and unfailingly? If the vitamin product is nauseous or distasteful or even tasteless, it's medicine to the children, dosage hour gets skipped and half the bottle may be still unused a month later.

VI-DELTA EMULSION

[Vitamins A and D]

Lederle

We claim that Vi-Delta Emulsion really tastes good. Like orange syrup! Like candy! The children prompt Mother at dosing time. Sugar, malt, orange juice plus a new tasteless concentrate of fish liver oils of abundant potency made by a new process! You can give the pure concentrate itself in drops to infants who regurgitate other oils. Or take it straight yourself without making a wry face! So, in Vi-Delta Emulsion there is no original rank fish-oil taste to be disguised. "Yes, doctor, we're on the third bottle!"

The concentrate is made from various fish liver oils (excluding cod) blended and balanced in vitamin potency so that Vi-Delta Emulsion slightly exceeds cod liver oil U.S.P. XI in Vitamin A and D content, facilitating familiar dosing practises.

PACKAGES:

"Vi-Delta Emulsion *Lederle*"—each teaspoonful (4 cc.—5.2 grams) contains 3200 units U.S.P. XI Vitamin A, when made, and 400 units U.S.P. XI Vitamin D, exceeding minimum strength Cod Liver Oil U.S.P. XI. . . . 8 oz. and pint bottles.

"Vi-Delta Liquid Concentrate *Lederle*"—five drops (.11 gram) provide approximately 9,500 units U.S.P. XI of Vitamin A and 1,200 units U.S.P. XI of Vitamin D. . . . 5 cc. and 30 cc. dropper bottles for babies.

"Vi-Delta Liquid Concentrate (Capsules) *Lederle*"—each capsule (.17 gram) contains 15,000 units U.S.P. XI of Vitamin A and 1,870 units U.S.P. XI of Vitamin D. . . . Packages of 25, 50 and 100 capsules.

LEDERLE LABORATORIES, INC.
30 ROCKEFELLER PLAZA
NEW YORK, N. Y.

Rogers Memorial Sanitarium

Oconomowoc, Wisconsin

Phone 448

RESIDENT PHYSICIANS

James C. Hassall, M. D.

Medical Director

Donald A. R. Morrison, M. D.

Owen C. Clark, M. D.



For the treatment of NERVOUS and MENTAL DISEASES

Fireproof building; modern, home-like accommodations; beautiful views over lakes. Sixty acres of park. Every essential for treatment provided, including hydro-, physio- and occupational therapy under supervision of trained personnel. Number of patients limited, assuring personal attention from the resident staff.

BOARD OF TRUSTEES

JAMES C. HASSALL, M. D.

FREDERICK PABST

Oconomowoc, Wis.

T. H. SPENCE

MITCHELL MACKIE

MACKEY WELLS

Milwaukee, Wisconsin

PETER BASSOE, M. D.

Chicago, Illinois

W. S. MIDDLETON, M. D.

Madison, Wisconsin

MICHELL FARM



MICHELL FARM

Mild Nervous and Mental
Diseases

MICHELL SANITARIUM

Severe Nervous and Mental
Drug and Alcoholic Cases

Licensed by the State of Illinois

George W. Michell, M.D., Medical Director; Helen C. Coyle, M.D., Psychiatrist

Wm. H. Holmes, M.D., Chicago, Med. Con.

Fritz Moellenhoff, M. D., Neuropsychiatrist and Psychoanalyst

Selected Cases of Schizophrenia (Dementia Praecox) received for Insulin Shock Therapy

Literature on Request • 106 N. Glen Oak Ave., Peoria, Illinois

Please mention ILLINOIS MEDICAL JOURNAL when writing to advertisers

The New York Academy of Medicine

THIS BOOK MUST NOT BE RETAINED FOR
LONGER THAN ONE WEEK AFTER THE LAST
DATE ON THE SLIP UNLESS PERMISSION FOR ITS
RENEWAL BE OBTAINED FROM THE LIBRARY.

MAR 7 '41			
APR 11 '41			
MAY 17 '41			
JUN 18 '41			
JUL 18 '41			
AUG 18 '41			
SEP 11 '41			
OCT 11 '41			
NOV 11 '41			
DEC 11 '41			
JAN 11 '42			
FEB 11 '42			
MAR 11 '42			
APR 11 '42			
MAY 11 '42			
JUN 11 '42			
JUL 11 '42			
AUG 11 '42			
SEP 11 '42			
OCT 11 '42			
NOV 11 '42			
DEC 11 '42			
JAN 11 '43			
FEB 11 '43			
MAR 11 '43			
APR 11 '43			
MAY 11 '43			
JUN 11 '43			
JUL 11 '43			
AUG 11 '43			
SEP 11 '43			
OCT 11 '43			
NOV 11 '43			
DEC 11 '43			
JAN 11 '44			
FEB 11 '44			
MAR 11 '44			
APR 11 '44			
MAY 11 '44			
JUN 11 '44			
JUL 11 '44			
AUG 11 '44			
SEP 11 '44			
OCT 11 '44			
NOV 11 '44			
DEC 11 '44			
JAN 11 '45			
FEB 11 '45			
MAR 11 '45			
APR 11 '45			
MAY 11 '45			
JUN 11 '45			
JUL 11 '45			
AUG 11 '45			
SEP 11 '45			
OCT 11 '45			
NOV 11 '45			
DEC 11 '45			
JAN 11 '46			
FEB 11 '46			
MAR 11 '46			
APR 11 '46			
MAY 11 '46			
JUN 11 '46			
JUL 11 '46			
AUG 11 '46			
SEP 11 '46			
OCT 11 '46			
NOV 11 '46			
DEC 11 '46			
JAN 11 '47			
FEB 11 '47			
MAR 11 '47			
APR 11 '47			
MAY 11 '47			
JUN 11 '47			
JUL 11 '47			
AUG 11 '47			
SEP 11 '47			
OCT 11 '47			
NOV 11 '47			
DEC 11 '47			
JAN 11 '48			
FEB 11 '48			
MAR 11 '48			
APR 11 '48			
MAY 11 '48			
JUN 11 '48			
JUL 11 '48			
AUG 11 '48			
SEP 11 '48			
OCT 11 '48			
NOV 11 '48			
DEC 11 '48			
JAN 11 '49			
FEB 11 '49			
MAR 11 '49			
APR 11 '49			
MAY 11 '49			
JUN 11 '49			
JUL 11 '49			
AUG 11 '49			
SEP 11 '49			
OCT 11 '49			
NOV 11 '49			
DEC 11 '49			
JAN 11 '50			
FEB 11 '50			
MAR 11 '50			
APR 11 '50			
MAY 11 '50			
JUN 11 '50			
JUL 11 '50			
AUG 11 '50			
SEP 11 '50			
OCT 11 '50			
NOV 11 '50			
DEC 11 '50			
JAN 11 '51			
FEB 11 '51			
MAR 11 '51			
APR 11 '51			
MAY 11 '51			
JUN 11 '51			
JUL 11 '51			
AUG 11 '51			
SEP 11 '51			
OCT 11 '51			
NOV 11 '51			
DEC 11 '51			
JAN 11 '52			
FEB 11 '52			
MAR 11 '52			
APR 11 '52			
MAY 11 '52			
JUN 11 '52			
JUL 11 '52			
AUG 11 '52			
SEP 11 '52			
OCT 11 '52			
NOV 11 '52			
DEC 11 '52			
JAN 11 '53			
FEB 11 '53			
MAR 11 '53			
APR 11 '53			
MAY 11 '53			
JUN 11 '53			
JUL 11 '53			
AUG 11 '53			
SEP 11 '53			
OCT 11 '53			
NOV 11 '53			
DEC 11 '53			
JAN 11 '54			
FEB 11 '54			
MAR 11 '54			
APR 11 '54			
MAY 11 '54			
JUN 11 '54			
JUL 11 '54			
AUG 11 '54			
SEP 11 '54			
OCT 11 '54			
NOV 11 '54			
DEC 11 '54			
JAN 11 '55			
FEB 11 '55			
MAR 11 '55			
APR 11 '55			
MAY 11 '55			
JUN 11 '55			
JUL 11 '55			
AUG 11 '55			
SEP 11 '55			
OCT 11 '55			
NOV 11 '55			
DEC 11 '55			
JAN 11 '56			
FEB 11 '56			
MAR 11 '56			
APR 11 '56			
MAY 11 '56			
JUN 11 '56			
JUL 11 '56			
AUG 11 '56			
SEP 11 '56			
OCT 11 '56			
NOV 11 '56			
DEC 11 '56			
JAN 11 '57			
FEB 11 '57			
MAR 11 '57			
APR 11 '57			
MAY 11 '57			
JUN 11 '57			
JUL 11 '57			
AUG 11 '57			
SEP 11 '57			
OCT 11 '57			
NOV 11 '57			
DEC 11 '57			
JAN 11 '58			
FEB 11 '58			
MAR 11 '58			
APR 11 '58			
MAY 11 '58			
JUN 11 '58			
JUL 11 '58			
AUG 11 '58			
SEP 11 '58			
OCT 11 '58			
NOV 11 '58			
DEC 11 '58			
JAN 11 '59			
FEB 11 '59			
MAR 11 '59			
APR 11 '59			
MAY 11 '59			
JUN 11 '59			
JUL 11 '59			
AUG 11 '59			
SEP 11 '59			
OCT 11 '59			
NOV 11 '59			
DEC 11 '59			
JAN 11 '60			
FEB 11 '60			
MAR 11 '60			
APR 11 '60			
MAY 11 '60			
JUN 11 '60			
JUL 11 '60			
AUG 11 '60			
SEP 11 '60			
OCT 11 '60			
NOV 11 '60			
DEC 11 '60			
JAN 11 '61			
FEB 11 '61			
MAR 11 '61			
APR 11 '61			
MAY 11 '61			
JUN 11 '61			
JUL 11 '61			
AUG 11 '61			
SEP 11 '61			
OCT 11 '61			
NOV 11 '61			
DEC 11 '61			
JAN 11 '62			
FEB 11 '62			
MAR 11 '62			
APR 11 '62			
MAY 11 '62			
JUN 11 '62			
JUL 11 '62			
AUG 11 '62			
SEP 11 '62			
OCT 11 '62			
NOV 11 '62			
DEC 11 '62			
JAN 11 '63			
FEB 11 '63			
MAR 11 '63			
APR 11 '63			
MAY 11 '63			
JUN 11 '63			
JUL 11 '63			
AUG 11 '63			
SEP 11 '63			
OCT 11 '63			
NOV 11 '63			
DEC 11 '63			
JAN 11 '64			
FEB 11 '64			
MAR 11 '64			
APR 11 '64			
MAY 11 '64			
JUN 11 '64			
JUL 11 '64			
AUG 11 '64			
SEP 11 '64			
OCT 11 '64			
NOV 11 '64			
DEC 11 '64			
JAN 11 '65			
FEB 11 '65			
MAR 11 '65			
APR 11 '65			
MAY 11 '65			
JUN 11 '65			
JUL 11 '65			
AUG 11 '65			
SEP 11 '65			
OCT 11 '65			
NOV 11 '65			
DEC 11 '65			
JAN 11 '66			
FEB 11 '66			
MAR 11 '66			
APR 11 '66			
MAY 11 '66			
JUN 11 '66			
JUL 11 '66			
AUG 11 '66			
SEP 11 '66			
OCT 11 '66			
NOV 11 '66			
DEC 11 '66			
JAN 11 '67			
FEB 11 '67			
MAR 11 '67			
APR 11 '67			
MAY 11 '67			
JUN 11 '67			
JUL 11 '67			
AUG 11 '67			
SEP 11 '67			
OCT 11 '67			
NOV 11 '67			
DEC 11 '67			
JAN 11 '68			
FEB 11 '68			
MAR 11 '68			
APR 11 '68			
MAY 11 '68			
JUN 11 '68			
JUL 11 '68			
AUG 11 '68			
SEP 11 '68			
OCT 11 '68			
NOV 11 '68			
DEC 11 '68			
JAN 11 '69			
FEB 11 '69			
MAR 11 '69			
APR 11 '69			
MAY 11 '69			
JUN 11 '69			
JUL 11 '69			
AUG 11 '69			
SEP 11 '69			
OCT 11 '69			
NOV 11 '69			
DEC 11 '69			
JAN 11 '70			
FEB 11 '70			
MAR 11 '70			
APR 11 '70			
MAY 11 '70			
JUN 11 '70			
JUL 11 '70			
AUG 11 '70			
SEP 11 '70			
OCT 11 '70			
NOV 11 '70			
DEC 11 '70			
JAN 11 '71			
FEB 11 '71			
MAR 11 '71			
APR 11 '71			
MAY 11 '71			
JUN 11 '71			
JUL 11 '71			
AUG 11 '71			
SEP 11 '71			
OCT 11 '71			
NOV 11 '71			
DEC 11 '71			
JAN 11 '72			
FEB 11 '72			
MAR 11 '72			
APR 11 '72			
MAY 11 '72			
JUN 11 '72			
JUL 11 '72			
AUG 11 '72			
SEP 11 '72			
OCT 11 '72			
NOV 11 '72			
DEC 11 '72			
JAN 11 '73			
FEB 11 '73			
MAR 11 '73			
APR 11 '73			
MAY 11 '73			
JUN 11 '73			
JUL 11 '73			
AUG 11 '73			
SEP 11 '73			
OCT 11 '73			
NOV 11 '73			
DEC 11 '73			
JAN 11 '74			
FEB 11 '74			
MAR 11 '74			
APR 11 '74			
MAY 11 '74			
JUN 11 '74			
JUL 11 '74			
AUG 11 '74			
SEP 11 '74			
OCT 11 '74			
NOV 11 '74			
DEC 11 '74			
JAN 11 '75			
FEB 11 '75			
MAR 11 '75			
APR 11 '75			
MAY 11 '75			
JUN 11 '75			
JUL 11 '75			
AUG 11 '75			
SEP 11 '75			
OCT 11 '75			
NOV 11 '75			
DEC 11 '75			
JAN 11 '76			
FEB 11 '76			
MAR 11 '76			
APR 11 '76			
MAY 11 '76			
JUN 11 '76			
JUL 11 '76			
AUG 11 '76			
SEP 11 '76			
OCT 11 '76			
NOV 11 '76			
DEC 11 '76			
JAN 11 '77			
FEB 11 '77			
MAR 11 '77			
APR 11 '77			
MAY 11 '77			

